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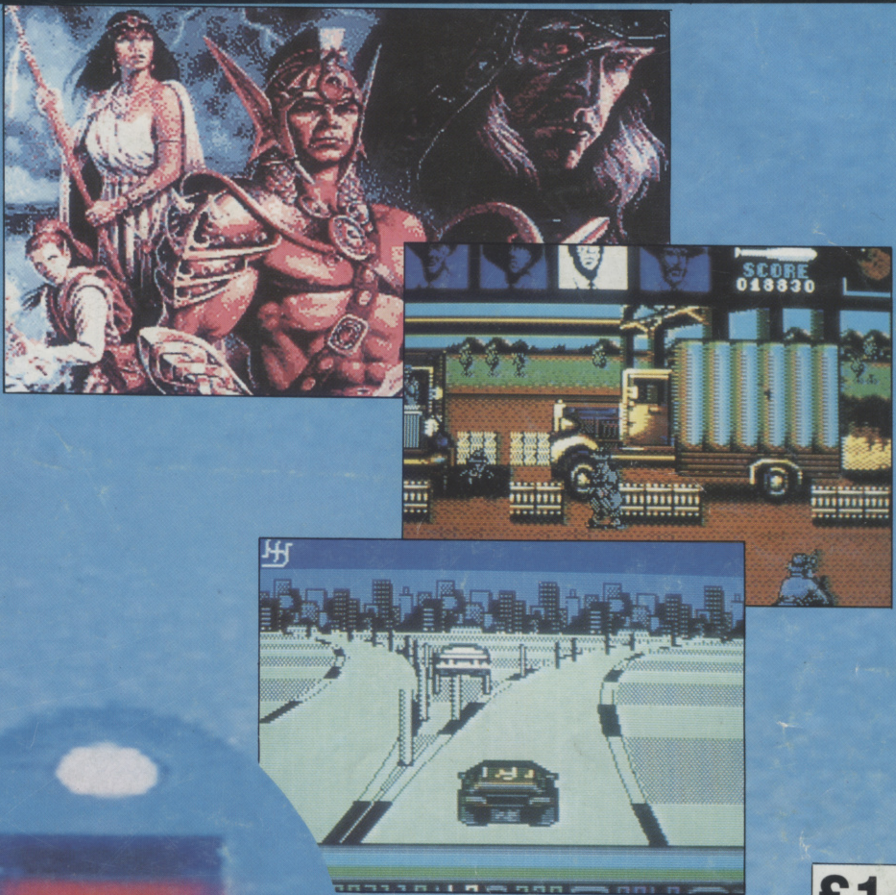

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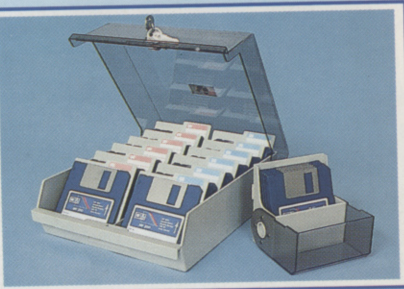

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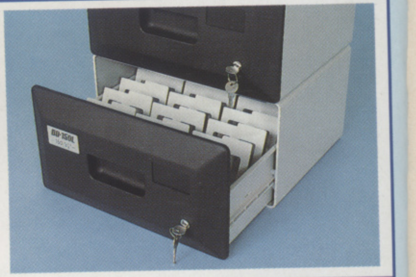

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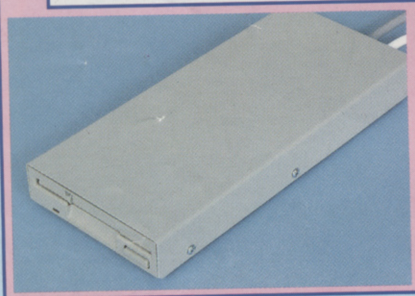

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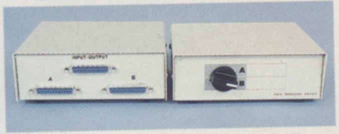

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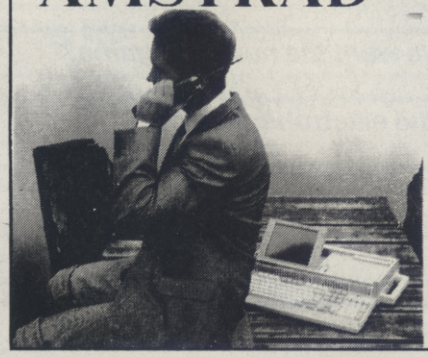

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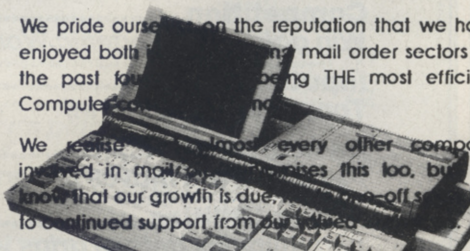

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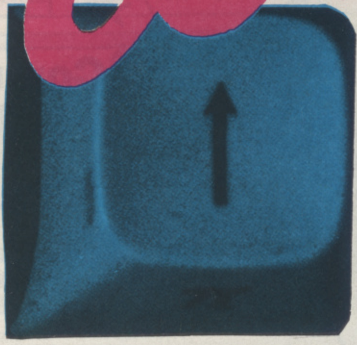

COMMODORE
COMPUTING
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Feburary 1990 Volume 8 No. 6

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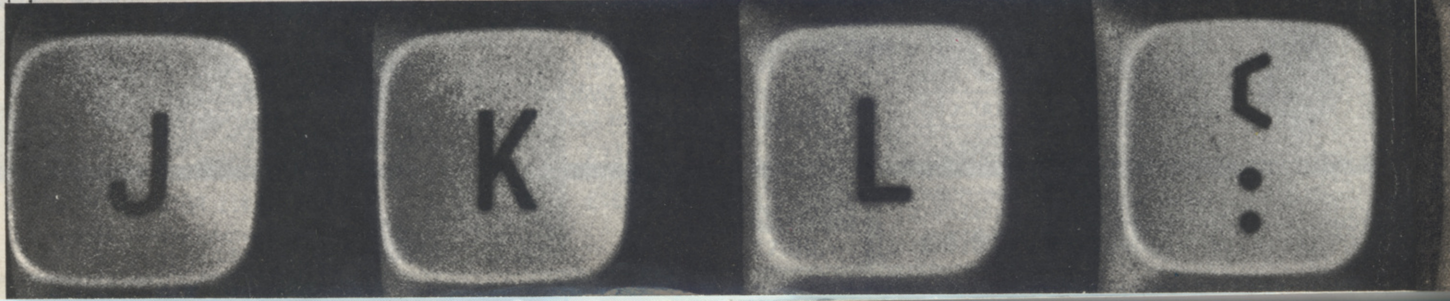

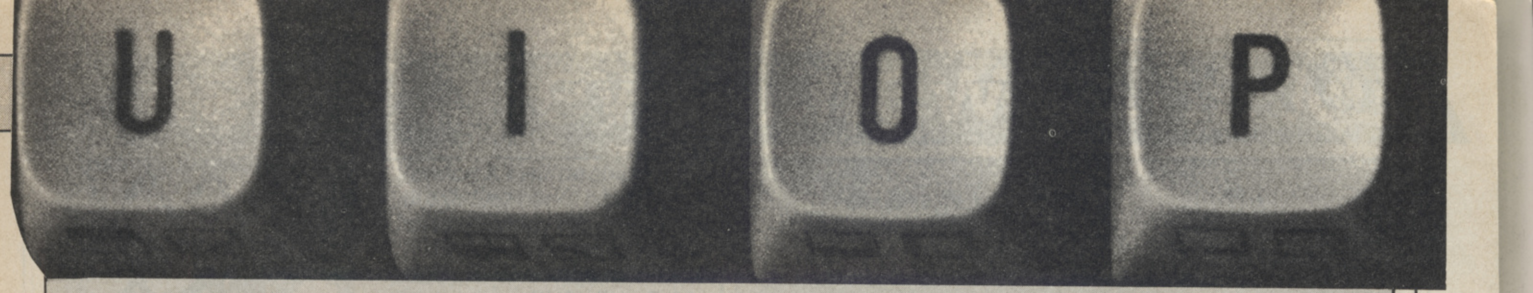

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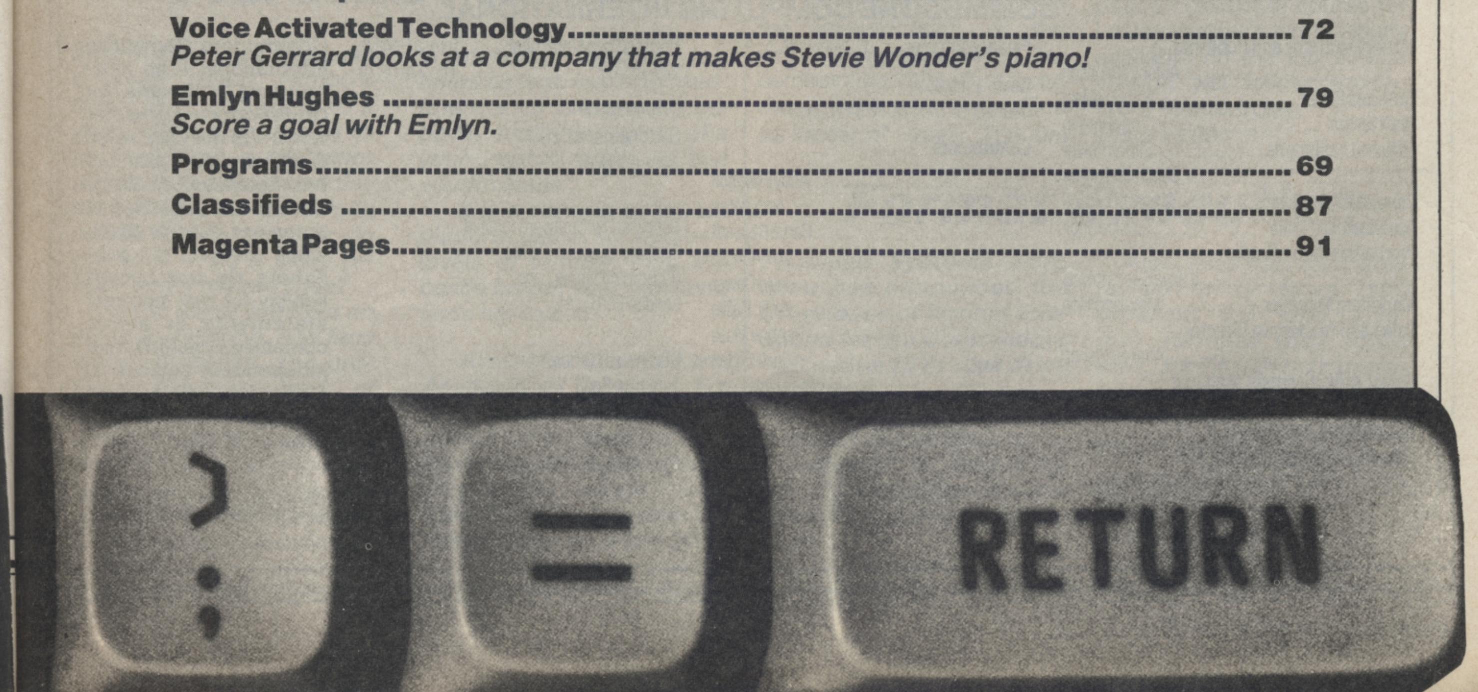

CCI View

Dear CCI Reader,

The numbers game is very important to us. We demand measurement through much of our lives. So many shopping days to Christmas...51 Vietnamese deported against their will... the price of the house fell from £150,000 to £120,000...8240 (?) kilometres from Moscow to Washington...5 billion people in the world... It is as though we are best,perhaps only,able to establish and validate our reality statistically.

Commodore recently joined in the numbers game by announcing,with some justifiable pride, that the 200,000th Amiga has been sold in the U.K. - and that the 2,000,000th Amiga will be shipped (or more probabIy trucked) early in 1990. It took three years to reach that 200,000 figure in the UK - with the largest part coming in the last year.

In the same twelve months,in the U.K., CBM sold in excess of 200,000 64's- something like 150,000 of them in six weeks or so before Christmas.With figures like that, the 64 could rightly claim,as Mark Twain did when he saw his own obituary in a newspaper, "Reports of my death have been somewhat exaggerated."

Maybe CBM's reticence on the 64 success is because measured against the 8 or 9 million already sold another few hundred thousand may not seem to add up to much; whereas selling the first 200k of anything is clearly an achievement.

Yet does the numbers game really have that much importance?Well,the answer is yes...and no. For a company like Commodore selling a lot is not just important but possibly vital. It brings "the economies of scale" - in other words, mass production cuts costs. They need to sell more to cut the costs and get the price down so that they can sell more to cut the costs and get the price down so they can sell more...The more they sell, the stronger the position with their suppliers of chips and all the other bits that make up your machine. It permits them to make less profit per computer but more overall. Then they can re-invest more in research to develop their present computers,or new ones,to compete in two or five or ten years time. And then they can sell more of them to.. among other things give their shareholders a return on the capital they have invested.. It's how our system of private enterprise works.

The "No" side is because sometimes the numbers game is just a matter of corporate pride, the competitive spirit in the biggest game in town - business, an adult version of the childish "I can run faster than you!". Then it is the number of things not their worth that is counted.

But we don't always measure aspects of our lives. We sometimes judge not by the quanitity but by the quality. Rolls Royce does not boast how many cars it has built this year. It could build many more by lowering the quality. It is the quality of life that has become more obviously important to us in a materially- dominated world. The computer has contributed toward improving the quality of our lives by quickly performing tasks that are boring and time-consuming.

Would Commodore have been wiser to have concentrated on improving the C64 and not got involved in the Amiga? They perhaps could then have sold more and more at lower and lower prices. Now that Eastern Europe is opening up, isn't the 64 just the machine it will need in huge quanities? Is perhaps the approach that we should concentrate on building in quality and then bulding quantity, keeping change to a minimum and continuing to improve the established product, the way the Japanese do and conquer the industrial world?

Am I odd because I only use one computer - or one of almost anything at a time? How many computers do you think you need? But that's not the way our society seems to push us. Use it, throw it away and get another. That's what the numbers game is really all about.

The computer, of course, plays the numbers game but only with two numbers - 1 or 0,yes or no. I like that. It keeps life so much simpler, don't you think?

Antony H. Jacobson
Managing Editor and Publisher

Due to rising costs we are sorry to say that the price of CCI has risen to £1.30

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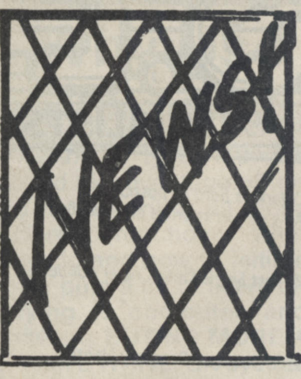

Prodata v1.1

Arnor have announced a new release of the Prodata datebase for the IBM PC, and Commodore Amiga. Version 1.1 will be shipped to all existing users of v1.0 as a free upgrade.

Enhancements include multiple line headers and footers, multiple line fields with word wrap and proportional right justified printing, variable height layouts, global totalling of data, use of mouse to speed up layout editing, string search, scrolling of long layouts in display mode, up to 10 indexes, faster filtering, create sub-database and optimised use of memory so that longer records may be used easily on small memory machines.

Prodata costs £79.95 Contact Douglas Thompson at Arnor. Telephone 0733 68909

RUN SILENT, RUN DEEP...

Experience the command of an American World War II combat submarine in the South Pacific in Mastertronic's 16 Blitz release, HUNTER KILLER. After the destruction of the American fleet at Pearl Harbour and the subsequent invasion of the Phillipines, the submarine fleet was the only element of the American Naval command that could take the battle directly to the Japanese - this is the world of Hunter Killer...

In this simulation the player has to familiarise himself with the controls of his vessel, then embark on a series of missions - from straightforward "search and destroy" sorties to escort duties modelled on real WWII campaigns. Eleven different submarines are featured, with fourteen separate missions to attempt at a range of difficulty levels as well as practice patrols that take place during the day or at night.

Developed for the Amiga in the USA by SOLARCO, Hunter Killer has a host of features all for the price of £4.99!

Contact: Lesley (Hello Sailor!) Walker on 01-727 8070

INSANELY MAD!

System Three are releasing a game called Flimbo's Quest. In it, according to a press release smuggled to us, they have a professor who is, they claim, 'insanley mad'. We want to know if you can be 'sanely mad' or do you have to be a news release writer named Cale?

In the game you take on the role of Flimbo, and face menacing freaks. The professor (insanely mad, of course!) thought he had found a way to create immortality, but the press releaser tells us, "instead his experiment went hideously wrong and he found himself dramatically ageing ten times as fast, insanely mad" (there is is!) "and craving the bodily sustaining juices of a young girl to regain his lost youthfulness".

It is a cartoon animated platform game, set across 7 levels of fantasy. Find the castle before your girlfriend finds her maker!

Available on the C64 and Amiga from February. For further information, and advice on psychological or literary problems, (could they all be insanely mad there?) please contact Adrian Cale on 01 866 5692

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Hi-Tec have released a new high speed modem which, they claim is £300 cheaper than the competition. The modem - Hi-Tec EC2400 has a usual price £699 + VAT but is now being sold for a special price £399 + VAT. The quad speed V22 bis with 2400/2400 baud Hayes compatible modem also has MNP level 5 data compression with double speed data transfer up to 4800 bps and 100% error free Data transfer. Contact: Hi-Tec Modems Ltd, 131 Wellington Street, Peterborough PE1 5DU Tel: 0733 897333

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Conflict is not a game with "goodies" and "baddies" - There can be no right or wrong side in any war. Conflict is frightening simulation of what is now probably the only real threat to global peace - except of course for Lesley Walker's legs. Initially available on the PC, Amiga version will follow shortly. From Mastertronic,
Price £4.99

Format Executive

Financial Systems Software has announced the UK release of Format Executive for the Commodore 128 with a 1571 disk drive and 128D.

Format Executive allows 128/64 files to be transferred to and from the Commodore Amiga, Atari ST and Apple Macintosh.

Also, files can be transferred to or from, 150 different 3.5" and 5.25" disk formats with ASCII and PETASCII translations.

Price: £59.95. Contact: FSSC, 18 High Street, Pershore, Worcestershire, WR10 1BG.

Tel: (0386) 553153.

Maverick v3

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- For GEOS v2 owners with 1581 drives, Maverick v3's GEOS Toolkit has a utility that allows you to transfer the incredible GEOS v2 over to your high speed, high capacity 1581 drive! This transfers everything, meaning you can now run the 64 or the 128 version from the 1581 alone, without using the 5¼" disk at all! And, the 800k 1581 disk leaves plenty of room to transfer all your GEOS applications over to the same disk! Essential for serious GEOS users wishing to unleash the power of Berkeley Softworks revolutionary operating environment.
- Maverick v3 now boasts 400+ parameters that either copy or entirely break potentially destructive protection schemes of some of the world's finest software. Even current Maverick owners will be amazed by the enhancements and additions made, including special RAMBOard support capabilities, exclusive to Maverick v3

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- ★ GEOS Module Parameters & TOOLS
- ★ GEOS Sector editor — works under desk top
- ★ Directory editor helps you organize disks
- ★ Works with 64, 128, 1541/1571/1581 drives
- ★ Technical support from our staff experts

All of these new features are in addition to the amazing array of utilities usually found in Maverick. If there's a better value product on the market, we'd like to see it.

THE NEW MAVERICK v3.0 — ONLY £24.95

Now includes parameter modules 1,2,3,4 and 5. Maverick v3 (formerly Renegade) is available from FSSL. Products which work — from a company who care.

The 1581 Toolkit

Without it you don't know what your 1581 is capable of!

It shocked everyone at a recent London Commodore Show preview — it is The 1581 Toolkit by Kracker Jax, the makers of Renegade and Maverick.

While other companies rushed out ill-conceived and poorly executed programs to "cash in" on the new 1581 disk drive, our programmers took time to become experts on the 1581 before even looking at a drawing board. When they finished the Toolkit project a full year later, they had created a tight, integrated package of essential utilities that make the 1581 fly. We'll take your computer and 1581 as far as it was designed to go, then take it further.

The Fast Data Copier and Fast File Copier now supports 1764 for 3 pass copying, 1750 for 2 pass copying and 64k Video RAM (128 users) for 6 pass copying

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All of these custom utilities use extremely fast read/write routines. Where appropriate they allow full access to partitions. If you order now we will send you the 1581 DOS Reference Guide FREE! With over 100 pages of concise valuable information, this manual represents a year's worth of research and investigation into the inner working of the 1581 drive and includes a complete commentated ROM disassembly listing.

THE 1581 TOOLKIT (on 3.5" disk) ONLY £34.95

Includes your FREE 1581 DOS Reference Guide. The 1581 Toolkit, works on the C-64 or the C-128/C-128D in the 64 Mode.

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The Cartridge Wars. For a while it was tough going — but we kept fighting to be the best. Now public opinion is unanimous, the Cartridge Wars are over — and Super Snapshot is the clear winner!

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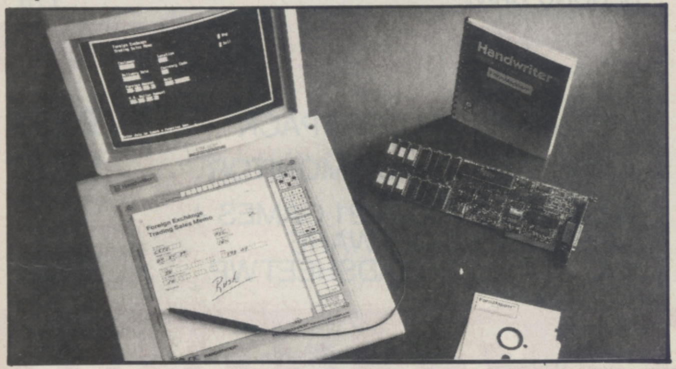
Why Use a Keyboard When You Can Write

Learning to type, with the added disadvantage of trying to remember all those different functions, what they do and how to initiate them puts a lot of users off buying a computer and software. **BUT NO MORE.**

With a WRITE-ON system from Graf Systems and your software package, you can combine the functions of keyboard, mouse and other input devices into one, and, the company says, work faster and more comfortably as well. WRITE-ON offers the user: An all-in-one input system, Template display software structure, User definable "Softkeys", Pen touch icons, User definable character macros, Greater speed for beginners and occasional users alike.



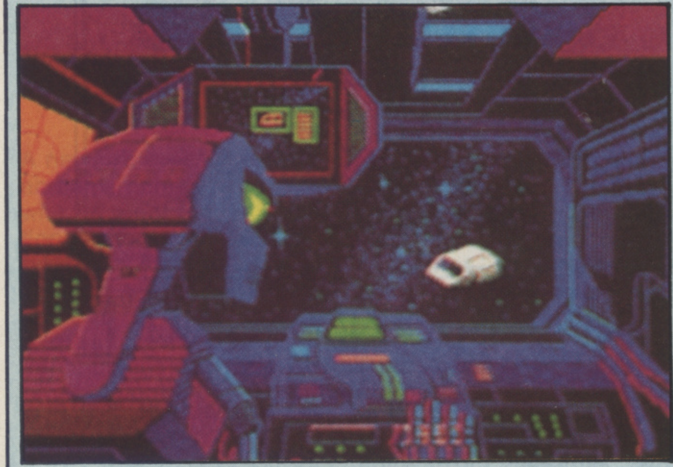
Simplified user interface PC's and workstations

What is claimed to be a significantly friendlier user interface for PC's and workstations has been developed at Siemens Research laboratories in Princeton, New Jersey. This software package is what is clled a "tiled interface" — a program implemented under X-Windows to facilitate easier working.

In contrast with previous techniques, windows relating to various sub-tasks do not overlap on the screen, but are arranged adjacent to each other in various sizes. As the information relating to all sub-tasks remains visible, work on complex applications is made easier, especially when several sub-programs have to be processed simultaneously.

The technique developed by Siemens arranges the position and size of the windows automatically. It is analogous to the applicatin of tiles of various size, shape and colour on a wall and, therefore, it is known as the "tiled window technique". The software program — the tile window manager — controls the size, placement and lettering of the windows on the screen.

The tiled window manager is implemented under X-Windows, which is supported by a series of leading computer manufacturers. It is available from MIT as the X-Windows Version 11, Release 3.



VENDETTA

When our hero heard that they'd got the girl his hackles rose. Why pick on her when it was the professor they were really after.

But if they wanted to play dirty then that was fine by him. He couldn't expect any co-operation from the police - his recent activities had given them more than enough reason to be suspicious of him. He would have to go it alone and smoke out the girl's kidnappers.

The ransom video that had been sent to the professor gave certain clues as to the location of the terrorists. Military paraphenalia gave an indication of something like an army camp or airfield in the background. Our hero reckoned that not only would he have to pick up vital clues as to the girl's whereabouts, but he'd also have to cover his own tracks thoroughly before the police started trailing him rather than concentrating on the real criminals.

His paramilitary skills would be tested to the full - bombs, bazookas and ballistic weapon systems would need to be employed successfully if he was to win this race against time. He jumped into his Ferrari F40, his pulse racing with a strange mixture of apprehension and excitement.

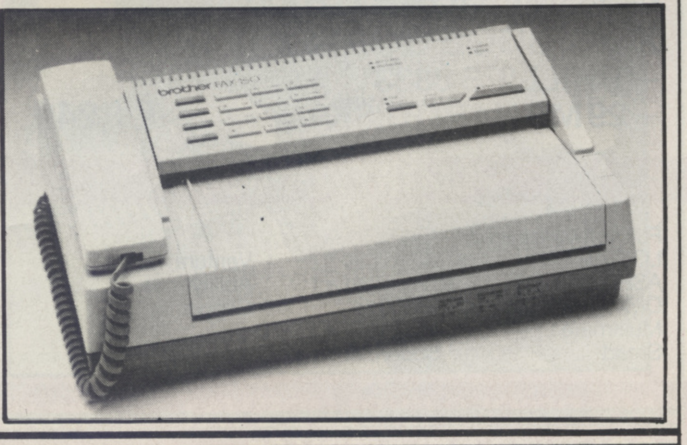
Vendetta is a 3D action strategy adventure in graphic locations. Contact System Three, Adrian Cale, Telephone 01-866 5692.

BROTHER'S FAX 150

The Brother Fax 150 desk top facsimile machine is now available at £497.00, including delivery, installation, and 24 month warranty. Unusual for a machine at this price, it provides 16 shades of grey scale, allowing transmission and reception of high-definition graphics.

It has an integral telephone handset, and single-button dialling for up to 20 numbers. The Brother Fax 150 has a transmission speed of 4800/2400 bps, and offers a range of standard facilities such as security password and auto answer switches, last number re-dial and tone or pulse dialling.

Contact: Action Computer Supplies, Abercorn Commercial Centre, Manor Farm Road, Wembley, Middx, HA0 1WL. Tel: 0800 333 333.



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9 PIN

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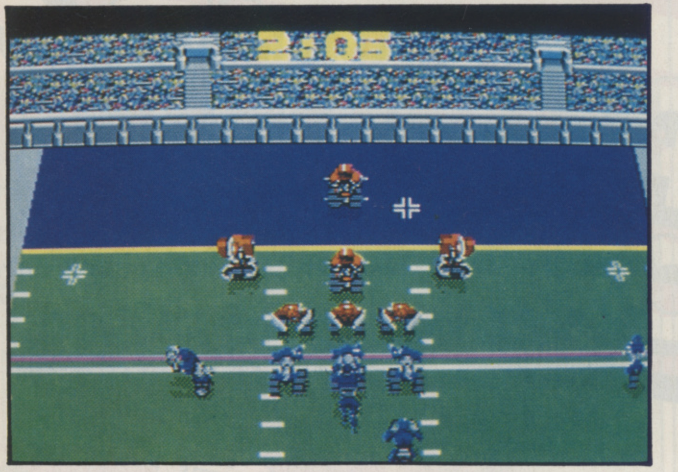

DOMARK'S CYBERBALL

The year is 2022... and the last human player has been eliminated from the game. Now, only robots five times the size of humans can withstand the violence and destruction... This is Cyberball-American Football our pacific friends at Domark tell us, at its most violent, full of colliding metal and exploding shrapnell - a coin-op conversion from the arcade game.

You choose your team from the likes of the Los Angeles Assassins and the New York Enforcers and select from over 100 offensive and defensive plays. You can select time-outs and replacements for weak or demolished players.

The challenge of the game Domark claims lies in working out the right tactics to annihilate the opposing team. Fit the selection of plays to the right conditions and you could be a winner. Make the wrong selection and you'll be crushed. For the offensive game select from running plays, option plays and pass plays. Choose the Defensive games and use short, medium and long plays.

The ball is made up of 350 pounds of steel and high-explosive material and measures three feet in diameter. The robots are about 20 feet tall and 8 feet wide, weigh in at 2000 pounds and cost about $1,250,000. And all of this can be crowded onto a little 64's screen? Wow!

MicroProse form In-House Programming Team

MicroProse have formed, for the first time a UK based in-house programming team. Tim Walter, Adrian Scotney and Malcolm Hellon are the core of the group, with more programmers expected early in the New Year. Their main arena of work will be in the programming of original simulation products in the UK and they will be responsible for aiding the conversion of MicroProse UK products, that are traditionally programmed initially on the PC, to the Amiga.

Commenting on their appointment, Paul Hibbard, MicroProse's publishing Director said,"The appointment of an in-house programming team takes MicroProse into a new era of growth. Within three years, MicroProse UK has developed from a niche market software supplier to being one of the most powerful and influential publishing houses in the industry."

Green link to Australia

A network providing peace and environmental activists with an electronic information system has set up a branch in Australia.

London-based Breennet, founded in 1985 to give professional computer communications to peace groups, added the seventh branch to its international network.

The organisation already has branches in the US, Canada, Brazil, Nicaragua and Sweden and aims to have more European nodes up in the next year, according to Greennet technical director Jeremy Mortimer.

Mortimer said Greennet now runs more than 500 electronic conferences on all topics of interest to peace, environmental and human rights groups.

Greennet is an independent organisation, funded from charitable trusts and its own earnings which come from its email and conferencing system, in which different conferences are moderated by groups such as the Action Group on Chemical Weapons and Oxfam.

INFRARED REMOTE CONTROLLER

EDU-VID's IR remote controller plugs into the parallel port of the Amiga computer and allows a VCR (or any other IR remote controlled device) to be operated by a user's program. The controller can learn the IR pulse codes from the remotes of most devices. It can also detect when the VCR is actually sending a video signal and it can, with suitable monitors, switch the screen from computer output to video output.

In addition, 'touch' tones can be placed on the videotape and the controller can detect them such that your computer program can do various things such as mix the Amiga's sound or voice with video sound, or overlay computer output (if a separate Genlock is used), or simply stop the video while the computer outputs to the screen.

EDU-VID's IR remote controller uses 4 AAA cells, plus, it draws less than 50 ma. from the Amiga. The complete package costs $180 (+$5 p+p) and includes the controller, cable to the Amiga, 2 VCR cables, disk with sample programs showing how to use the controller, and a detailed User's Manual.

A free, 8 page, information booklet is available from: Bert Whitfield, Edu-Vid Research, PO Box 149, Pembina, ND 58271 USA

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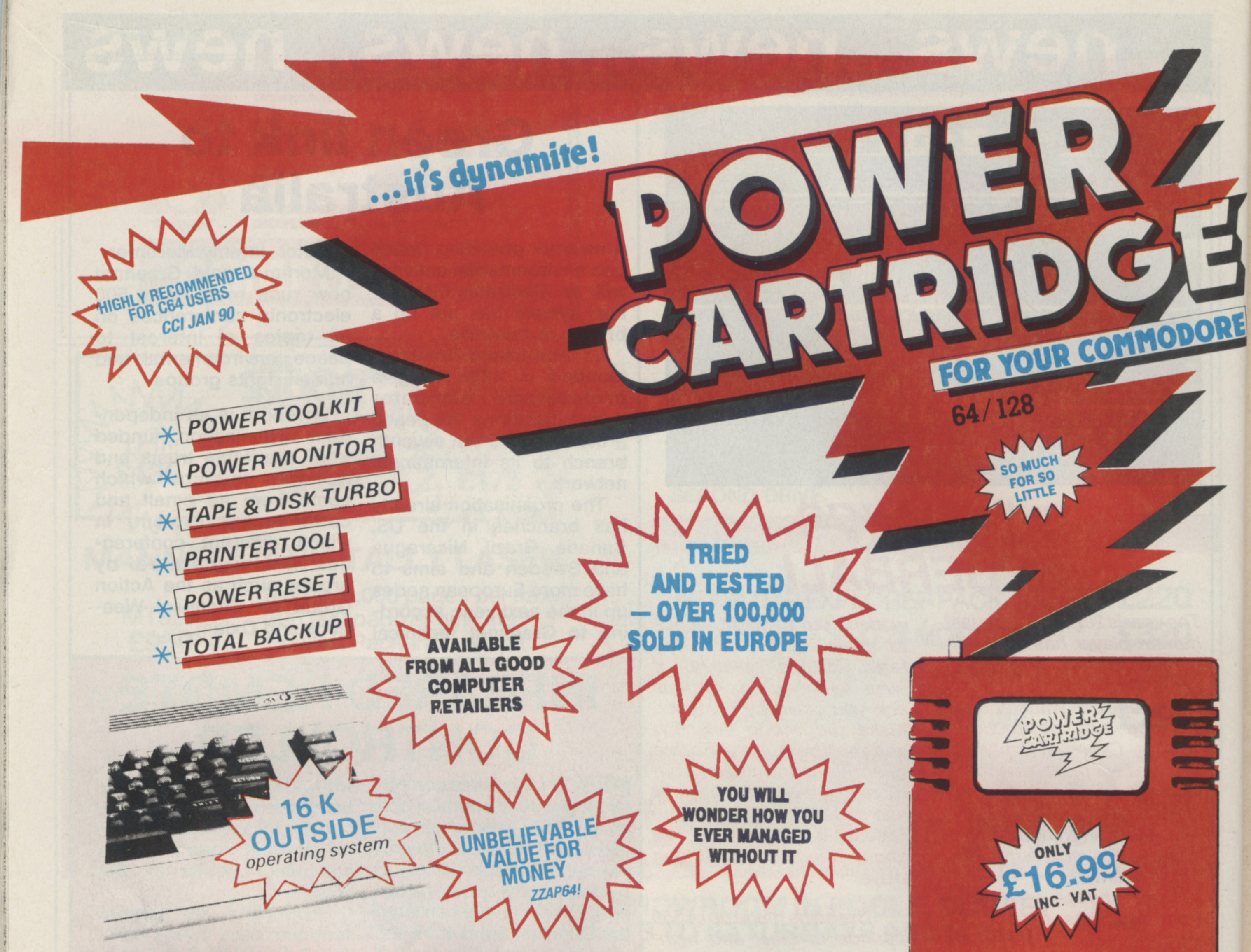

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DOKE
DUMP
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HARDCAT
HARDCOPY
HEX$
INFO
KEY
PAUSE
PLIST
ILOAD
RENUMBER
REPEAT
SAFE
TRACE
UNNEW
QUIT
MONITOR
BLOAD

RENUMBER : *Also modifies all the GOTO's GOSUB's etc. Allows part of a program to be renumbered or displaced.*
PSET : *Set up of printer type.*
HARDCAT : *Prints out Directory.*

The toolkit commands can be used in your programs.

DISK TOOL

Using POWER CARTRIDGE you can load up to 6 times faster from disk.
The Disk commands can be used in your own programs.

DLOAD
DSAVE
DISK
DVERIFY
MERGE
DIR
DEVICE

MERGE : *Two BASIC programs can be merged into one.*
DISK : *With DISK you can send commands directly to your disk.*

TAPE TOOL

Using POWER CARTRIDGE you can work up to 10 times faster with your data recorder. The Tape commands can be used in your own programs.

LOAD
MERGE
SAVE
AUDIO
VERIFY

POWERMON

A powerful machine language monitor that is readily available and leaves all of your Commodore memory available for programming.
Also works in BASIC-ROM, KERNAL and I/O areas.

A ASSEMBLE
C COMPARE
D DIS-ASSEMBLE
F FILL
G GO
H HUNT
I INTERPRET
J JUMP
L LOAD
M MEMORY
P PRINT
R REGISTER
S SAVE
T TRANSFER
V VERIFY
W WALK
X EXIT
$ DIRECTORY DOS Commands

PRINTERTOOL

The POWER CARTRIDGE contains a very effective Printer-Interface, that self detects if a printer is connected to the Serial Bus or User-Port.
It will print all Commodore characters on Epson and compatible printers.
The printer-interface has a variety of set-up possibilities. It can produce HARDCOPY of screens not only on Serial printers (MPS801, 802, 803 etc) but also on Centronic printers (EPSON, STAR, CITIZEN, PANASONIC, etc).
The HARDCOPY function automatically distingishes between HIRES and LORES. Multi-colour graphics are converted into shades of grey. The PSET functions allow you to decide on Large/Small and Normal/Inverse printing.
The printer PSET functions are:

PSET 0 - *Self detection Serial/Centronic*
PSET 1 - *EPSON mode only.*
PSET 2 - *SMITH-CORONA mode only.*
PSET 3 - *Turns the printing 90 degrees!!*
PSET 4 - *HARDCOPY setting for MPS802/1526.*

PSET B - *Bit-image mode.*
PSET C - *Setting Lower/Upper case and sending Control Codes.*
PSET T - *All characters are printed in an unmodified state.*
PSET U - *Runs a Serial printer and leaves the User-port available.*
PSET Sx - *Sets the Secondary address for HARDCOPY with Serial Bus.*
PSET L1 - *Adds a line-feed, CHR$ (10), after every line.*
PSET L0 - *Switches PSET L1 off*

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POWER RESET

On the back of the POWER CARTRIDGE there is a Reset Button. Pressing this button makes a SPECIAL MENU appear on the screen.
This function will work with any programme.

CONTINUE - *Allows you to return to your program.*
BASIC - *Return to BASIC.*
RESET - *Normal RESET.*
TOTAL BACKUP DISK - *Saves the contents of the memory onto a Disk. The program can be reloaded later with BLOAD followed by CONTINUE.*
RESET ALL - *RESET of any program.*
TOTAL BACKUP TAPE - *As BACKUP DISK but to TAPE.*
HARDCOPY - *At any moment, prints out a Hardcopy of the screen. Using CONTINUE afterwards you can return to the program.*
MONITOR *Takes you into the Machine language Monitor.*

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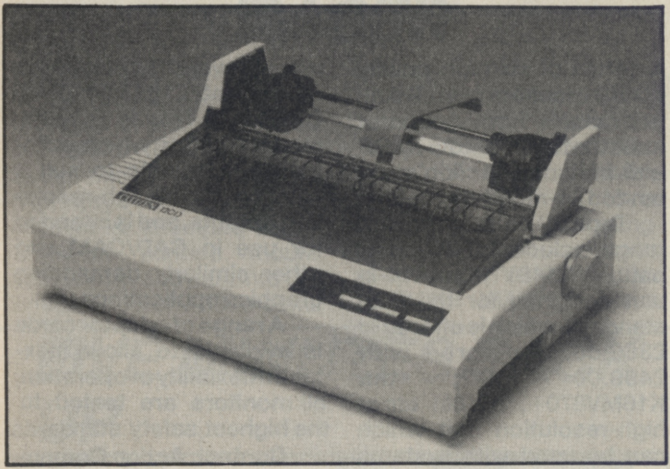


The success of Citizen's 9-pin workhorse, the 120D dot matrix computer printer, has taken it into its fourth year of production with sales of half a million units. With improvements to the 120D, Citizen predict that the printer's popularity will continue well into the 90's.

Citizen have given the printer a newly designed tractor feed which will improve paper handling to produce sharper print and graphics quality. The new design incorporates one sturdier paper guide (instead of the previous two) and an adapted pressure leaf which also provides a better hold on paper during printing. Citizen have extended the platen lines by two centimetres which allows the printer to accept every European standard paper size. Recommended retail price £199 including interface.

Contact Citizen on (0895) 7261.

SECOND INNINGS FOR GOOCH

Audiogenic Software, publishers of Emlyn Hughes International Soccer, are celebrating the appointment of Graham Gooch as England Team Captain by re-launching Graham Gooch's All Star Cricket, complete with 1989 teams.

Widely acclaimed as an outstanding simulation for the Commodore 64, Graham Gooch's All Star Cricket is, so Audiogenic cornily claim, "packed with enough features to bowl any maiden over!"

Features include dropped catches, wides, bouncers and full tosses - even the occasional 'retired hurt'! Scorecards are displayed at the end of every over, there are messages that scroll across the screen when a player or partnership reaches 50 or 100, plus realistic sound effects and superb digitised speech. There is even a practice mode in which you can brush up your batting and bowling - and action replays after the fall of a wicket so that you can see just where you went wrong!

Built into the game are players and averages for England, Australia, West Indies, Pakistan, India, Sri Lanka and New Zealand - plus a World XI and an All-Time XI.

In their PR mode, Audiogenic boast that Graham Gooch's All Star Cricket is "a real catch for all cricket fans" and provides the enthusiast with a real chance to beat the West Indies, which could be more than England will ever do!" If anybody wants to play cricket after the last dismal season, this might just be an acceptable way to do it! Available now on Commodore 64, £9.95 tape or £12.95 disk.

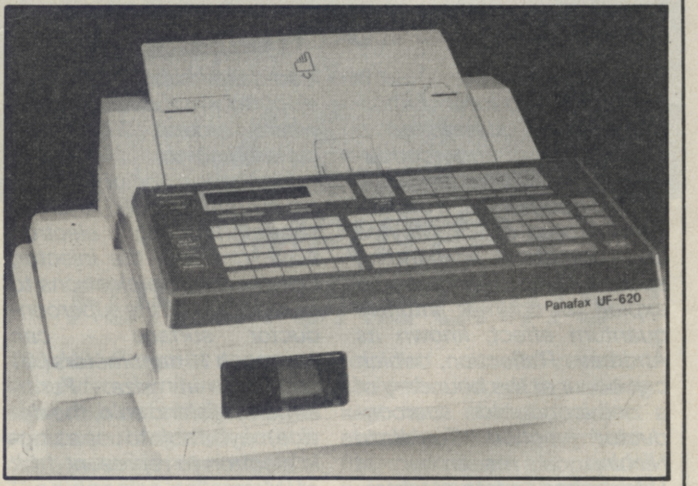
Panafax UF-620 Fax Machine has 60 page memory

Panasonic have released the Panafax UH-620 facsimile machine, a very high performance unit which has one megabyte of memory - equivalent to about 60 standard document pages - and features a transmission speed of about 11 seconds for an A4 page.

The UF620's very large memory saves operator time, since documents for transmission are rapidly scanned and stored so that the operator does not have to wait until the transmission is finished. The large memory also allows several numbers to be dialled sequentially to send the same material to up to 100 stations, and acts as a buffer so that incoming calls are stored in memory should the paper have run out.

Available from Action at £1995.00 (RRP £2995.00), the UF-620 offers one touch dialling for up to 40 stations, with dial and redial programmable, plus 60 two-digit abbreviations. Another feature is a coded reception facility, which allows confidential documents to be printed out only when the appropriate passcode is entered.

Contact: Action Computer Supplies, Abercorn Commercial Centre, Manor Farm Road, Wembley, Middx HA0 1WL. Tel: 0800 333 333.



FIVE PCs INTO ONE LASERJET

A buffered printer sharing device which allows up to five PCs to share the printing capabilities of a single HP laserjet II printer, the UK's biggest selling laser printer, has been launched by Auric International.

PCs are connected to the four serial ports provided by the device via compact RJ-II modular telephone-style connectors, allowing quick installation of low-cost four wire cable. The high speed parallel input port actually accepts data from the PC at a significantly higher speed than the standard LaserJet II parallel port, and at more than eight times the rate of competitive serial port only designs. EZQ Laser II's parallel port appears suitable for sending lengthy desk-top publishing or complex graphics files to the printer.

Contact: Auric International Ltd., Milton House, Milton Road, Wokingham, Berks RG11 1DE. Tel: (0734) 772734.

TWO'S A CROWD?

Micro Control Systems, the Nottingham based innovator of PC productivity aids, claims to end the printer war!

It has launched the Simple-2-Switch, a dual mode device that is available in serial or parallel, and allows two users to share the same printer. The company says it is as simple to operate as the standard mechanical T-switch and can be used with laser printers or plotters.

The Micro Control Systems Simple-2-Switch allows manual or automatic switching between users. An indicator light shows which user is connected to the printer.

"Not every computer user has a printer and it is frustrating for some to be kept waiting and wanting. Our new Simple-2-Switch aims to keep that frustration out of the office environment, so keeping productivity high," explains MCS Director Richard Tavener.

In automatic mode the switch knows when the printer or plotter is free, immediately allowing the second user access. Manually operated, the user has full control by way of a simple switch on the front of the device, just like a standard T-switch.

The Simple-2-Switch has adjustable time out periods of 5, 10, 20, 30 or 40 seconds, and 1, 2 or 5 minutes. This controls how long the automatic switch waits before allowing the other computer to send data.

The Simple-2-Switch costs £79. Contact MCS on 0602 391204.

Action extended warranty

A series of six high quality colour monitors from Taxan is available from Action at substantially below MRP and including Action's extended 24-month warrantry.

Typical units from the range include the PC-compatible K14SV765, a 14-in unit designed for the EGA standard, which is offered at £369.00, compared with £499.00 MRP; the K16MV870+, a 16in ultra-high-resolution unit which can be used with systems such as the PC-AT and flicker-fixed Amigas, and is offered at £599.00 (RRP £899.00); and the 20in, 100MHz K2OUV1000, the most powerful of the series, offered at £1897.00 (RRP £2699.00). This is a multi-mode monitor which automatically adjusts to suit a wide variety of high-resolution outputs, and is intended for use in CAD/CAM and other similarly demanding graphics applications.

A range of adaptor cards is available to allow maximum flexibility of operation, all monitors are tested to the highest safety standards.

Contact: Action Computer Supplies, Abercorn Commercial Centre, Manor Farm Road, Wembley, Middx, HA0 1WL. Tel: 0800 333 333.

36,000 GATES PER CHIP

Fujitsu Microelectronics Inc. will begin taking orders later this year for a new family of emitter coupled logic gates arrays that offer designers almost 36,000 usable gates on a chip, a record for emitter coupled logic. Individual gate speeds are 80 picoseconds unloaded and 240 ps loaded with a fanout of three. Total chip power dissipation runs from 15 to 30 watts. The array is housed in a 441-pin ceramic cavityless, surface mount pin grid array package with pre-attached heat sinks. Engineering samples will be available in early 1990.

HITACHI'S 256 MEG CHIP

Researchers at Hitachi Ltd.'s Advanced Research Laboratories have developed a prototype of a supercondutive chip incorporating 0.1 micron geometries, a capacity in excess of 256 Mbytes and operation at blinding speeds. Such a device would exploit a counter intuitive quantum effect, known as Andreev Reflection, which can occur at the boundary of a semiconductor suerconductor junction. Toshkazu Nishino, a researcher at Hitachi, has constructed prototypes based on this principle and expects the chip to be commercialised.

Nishino presented his research recently at the Third International Symposium on Quantum Mechanics hosted by Hitachi and held at the company's Advanced Research Laboratories.

While the work is still in early stages, it should lead to a so-called superconducting electron wave device somewhere around 2002, predicted Nishino.

In theory, one of the critical structures in an Andreev superconducting electron wave device - the injector, which emits the electrons to be reflected off the superconductor surface - can approach 10 nanometers (.01 microns) in size. Furthermore, Nishino said, the device may be able to use a single electron to represent 1 bit of information.

"Our goal is to make a superconducting element which is the size of a semiconductor," he said.

Andreev-type chips will contain many such semiconductor elements operating in parallel - Nishino has fabricated a prototype with 72 elements - and will find use in the analog circuits and neural networks of the 21st century.

MicroProse Changes

MicroProse Software Chairman Bill Stealey is claiming that MicroProse is poised for its most aggressive release schedule in its three years of existence and that in spite of a change in management structure at the company.

"MicroProse is set to release 18 major titles, each on several formats before the marked a significant evolutionary change, culminating in the acquisition of the Rainbird and Firebird brands and the launch of the MicroStatus and MicroStyle brands. There has also been an increased number of MicroProse Simulation Software titles, including the world famous F-15 Strike Eagle II and M1 Tank Platoon. This activity has enabled MicroProse significantly to increase its share of the European Software market. Our objective is to produce and market high quality software for the world market," Stealey told ***CCI.***

In a change of management structure, MicroProse's formal management board, established over the last year, will assume full responsibility for all European operations. MicroProse Managing Director, Stewart Bell, decided not to accept a new three year contract, and is now running his own company, Electronic Zoo. "Stewart Bell has done a wonderful job taking the company from start-up to a professionally managed company. He has put in place an excellent management team that can carry on the tradition of MicroProse", says MicroProse Chairman, Major Wild Bill Stealey.

"Stewart is a personal friend, and I wish him every success in his new venture. His decision was primarily based on his own entrepreneurial spirit and his desire to build his own new venture. I know he will do well."

The new MicroProse Management Board consists of Adrian Parr, Finance Director; Peter Jones, Marketing Director; Paul Hibbard, Publisher; John Tweedy, Sales Director and Paul Rowley, Operations Manager. However, it looks like Major Bill will continue for some time in a high profile role in Europe as well as in the U.S.A.

MEGA-MIDGET RACER

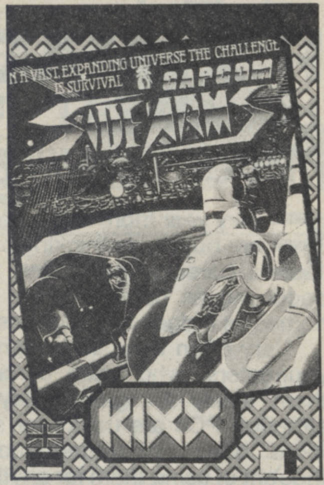
Computer System Associates (CSA) have announced the latest in Motorola 68030 accelerator technology, the "Mega-Midget Racer". The first,¯ say CSA, MC-68030 accelerator to employ state-of-the-art surface mount technology, and plug into the Amiga A500 or A2000 computers.

Evolving from CSA's popular Midget Racer, the "Mega-Midget Racer" features include selectable clock speeds of 20, 25 or 33MHZ, support for floating-point maths co-processors at speeds up to 40MHz, 32-bit 512KB SRAM for operating system kernal, 32-bit RAM expansion bus, and software selectable MC-68000.

Contact: Advanced Technology Holdings, 538-546 Whippendell Rd. Watford, Herts. Tel: 0923 817548.

KIXX

Kixx, U.S.Gold's budget label are releasing Side Arms for the Commodore 64. Originally a Capcom arcade game it should prove popular at £2.99.


IN A VAST EXPANDING UNIVERSE THE CHALLENGE IS SURVIVAL
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FIVE MINUTES BACK UP

Two slimline uninterruptible on-line power supplies from RPS are designed to mount unobtrusively between micro and vdu, and to provide the system with a continous supply of clean power in case of current surges or spikes. The two models are rated at 400 VA and 800 VA, and are available from Action Computer Supplies at £550.00 and £950.00 respectively.

These units provide full EMI/RFI filtering, and operate continuously to provide steady clean output at 220 V, 50 Hz, via two 13-A type sockets. In the event of power failure, both models will maintain supply for five minutes at full rated loads, typically 280 W and 560 W respectively.

Features include lead/cadmiun batteries, which require no maintenance; low-battery indicators; and audible alarm in the event of power failure.

Contact: Action Computer Supplies, Abercorn Commercial Centre, Manor Farm Road, Wembley, Middx HAO 1WL Tel: 0800 333 333

16 BLITZ GRIMBLOOD

Due out in February from 16 Blitz is GRIMBLOOD - a gothic whodunnit written by Mike Singleton, featuring digitised sound and graphics and promising a different game every load!

Deep within the walls of Castle Grimblood there lurks a murderer, who is preying on those who live and keep the rituals, as countless generations have before them. The young Earl, Maximus, must uncover the terrible secret in order that he can unlock the chains of timeless obedience to the rituals of the castle and gain his freedom, If he fails he is certain to fall victim himself to the stalking assassin's knife...

Developed for the Amiga,(a C64 version to follow), Grimblood will be released in February for the remarkable price of £4.99!

For further information contact: Lesley (legs) Walker on 01-727 8070

COMPUTER FURNITURE UNITS

The MIV Progress range of computer furniture is designed so that configurations can be put together to suit many possible requirements. The range also includes a terminal table and a printer table, available at £129.00 each, and a combined printer/terminal workstation available at £199.00.

The Progress Range is built on epoxy-coated tubular frames, and features rounded scratch-resistant surfaces; lockable sliding keyboard shelves; adjustable legs, allowing work surfaces to be set at optimum heights; and interchangeable lockable castors od adjustable feet for stability.

Contact: Action Computer Supplies, Abercorn Commercial Centre, Manor Farm Road, Wembley, Middx. Tel: 0800 333 333.

POCKET ETHERNET ADAPTOR

Data Translation of Wokingham now supplies Xircom's pocket Ethernet adaptor, an external adaptor that enables PCs, laptops or workstations to be networked without using internal slots. The adaptors connect through parallel port and come with drivers for most network operating systems. Each adaptor weighs 5oz and measures 5in x 3in.

The price per unit is £495.

Contact: Data Translation 0734 793838

PCs MADE EASY

by JAMES L.TURLEY

(McGraw Hill Book Co.Ltd £18.95)

Every year more and more people are buying, or thinking of buying, a personal computer. PCs are becoming as commonplace in many homes as fridges or the televisions.

Very often they are bought for the youngsters, who often commandeer them solely for games-playing, but although PCs are useful for so much more than just entertainment the thought of using them for anything else is, for many adults, a real nightmare.

What if I press the wrong key and everything disappears? Why don't they make the manuals easier to understand? What is the difference between ROM and RAM? How do I know how much memory I'll need? What's a spreadsheet? ASCII, what's that? A thousand and one questions that anyone who has ever sat before a terminal and looked at a keyboard for the first time will understand and sympathise with.

For the uninitiated and apprehensive help has now arrived. In PCs Made Easy, (McGraw-Hill Ltd £18.95), James L.Turley explains just what a personal computer is, what it can do, how it does it and what it can do for you.

If you are considering buying a PC, confronting one at work or have one and would like to know more about how it does what it does, then this book is for you. There is no technical jargon and even if the words are not all of one syllable they are pretty simple.

Turley starts with a little about the history of the computer, for to understand anything one has to know a certain amount about where, and how, that thing originated. With computers it is such a fascinating story that it is well worth the re-telling.

He then goes on to detail the various makes, the prices - approximate, of course, because every year brings price changes, usually down - the difference between hardware and software and he lists some basic computer terminology with an explanation of what the terms mean.

One of the things I particularly liked about this book is the way in which all the seemingly hi-tech language is fully explained in an understandable way.

Do you want to buy a PC piecemeal or as a 'bundle'? Which kind would best suit your needs? Turley gives advice on both. (He advocates Commmodore, by the way, as one of the most inexpensive home computers and the Amiga 'which has an excellent colour screen and can make good, clear music as well'!)

Laptops, the PCs that can sit comfortably on your knees, and which are the fastest growing segment of the personal computer market are not forgotten either. There is a detailed section on them, too.

Computer languages, the difference between the word processor and the dedicated word processor, desktop publishing, an explanation of all the different operating systems are all covered in this comprehensive manual.

For anyone who is not yet sure if they are ready for a PC this book will be a real aid. It proves that, contrary to what many non-users think, the personal computer is not a frightening square-eyed monster, ready to devour the timid, but a wonderful invention that is the servant not the master of those who use it.

THE WRITERS' GUIDE TO DESKTOP PUBLISHING

by KATHY LANG

(Academic Press £9.95)

With the birth of the desktop publishing programs a new wave of entrepreneur has arrived. With one relatively small PC and a printer, matrix, daisywheel or laser, anyone can become their own editor, printer and publisher and the amount of people jumping on this particular bandwagon is increasing rapidly.

Before the arrival of DTP if a club wanted a handbill, a church needed a monthly magazine, or a company an in-house newsheet, they either had to have them run off on a stencil or printed by a pukka company. Now anyone with an Amiga, an Apple, or even a C64, can aspire to become a Maxwell or a Murdoch.

But the people who have found DTP most useful are writers. Instead of wastepaper baskets full of ripped out, mistake-filled, typewritten sheets of A4, a masterpiece - as long as the author is capable of it - can be produced which is perfect in every way.

The trouble is that many writers are not computer-minded. It probably took them a good six months to fathom out the intricacies of the manual that accompanied their PC. And I speak as one who knows.

So 'The Writer's Guide To Desktop Publishing' by Kathy Lang (Academic Press £9.95) will come as manna from Heaven to anyone struggling to decide which particular program to go for. Or, if you have already taken the plunge and are trying to keep afloat in a sea of incomprehensible directions, grab the lifejacket offered by Ms. Lang.

For those who have not yet laid their money on the line, Lang shows what to look for in a DTP package in relation to what is required. After all, why let a salesman persuade you to go for an expensive DTP program plus graphics if all you want is to produce a simple newsletter?

The book is split into three parts, each detailed with exactly what it contains so that those who have some knowledge of the workings of DTP programs can skip the bits they do not need to read without having to wade through the whole thing.

Part One, for example, apart from the usual Introduction, lists the benefits - i.e. flexibility, time saving, improvement in quality of output, etc. - and the resources needed, money being just one, when considering buying a computer and its attendant DTP program.

In Part Two are shown the requirements needed in any specific DTP program, relative to what that package is to eventually produce. Do you need WYSYWIG (What You See Is What You Get)?

Space is another important aspect. You can't just plonk the whole lot on a shelf or a desk, even if it is called Desk Top Publishing. Seemingly simple but, maybe, unconsidered facts, need to be thought of. Such as the PC and the printer not being put on to the same surface. (The printer can produce vibration which could upset the disk drive and the dust produced by the paper being passed through the printer can also create problems inside the computer). And what about the time required to learn from either the manual or from a training course? That, too, needs to be considered.

The final part shows how to produce a publication, plan the illustrations and design and layout the document.

'The Writer's Guide to Desk Top Publishing' is concerned with the practicalities of the subject and is written in an easy-to-read-and- understand style . This is a book for all who need advice and/or guidance on DTP and at £9.95 is worth every penny.

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ELECTRON

Seeing is hardly believing, says Carolyn Beecroft, of this year's Computer Graphics Show.

Amiga A2000

Those who attended this year's computer graphics show at Alexandra Palace witnessed something unimaginable only a few years ago.

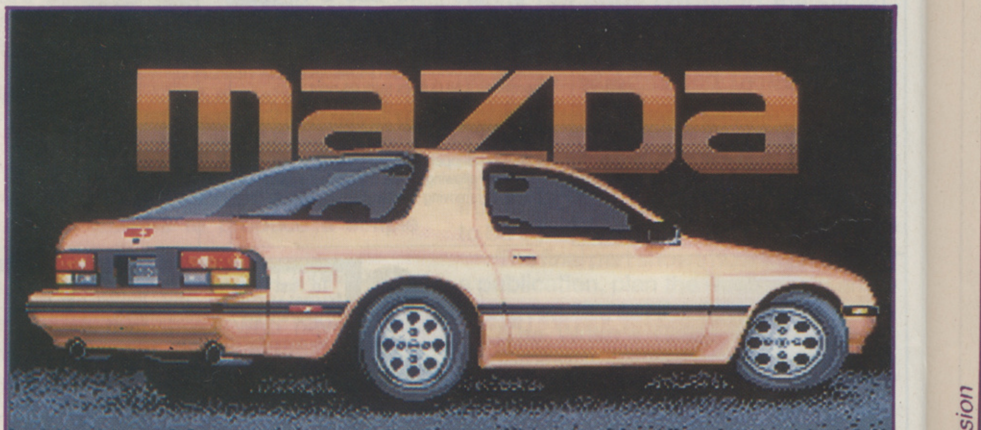
Then affordable, sophisticated computer graphics were little more than a desire. Nowadays they burst upon us with drama and creativity; simplifying tasks and yet making our visual existence increasingly complex.

Astonishingly, considering the five or even six figure costs that were — and even are — still commonplace is the computer graphics field, the Amiga at a much lower price can still hold its own, as a hardware platform for even the most professional of standards.

This year's show proved that changes in the hardware platforms available to the producers of creative computer graphics are more far reaching than ever. The number of system vendors has contracted as prices have gone down but performance has rocketed. The systems contraction has, however, been more than outweighed by the number of software programs on the marketplace. DTP is extending with the creation of sophisticated results now being the norm. Lower cost scanners are also now a real part of the computer graphics business: the Sharp JX series is a good example.

Commodore Business Machines were there at the show in full force. CBM showed a number of peripheral graphics products running on the Amiga 2000. The A2000 as a high grade, low cost graphics workstation is ideal for a wide variety of applications including graphics design, image processing, image storage and retrieval, animation, caption generation and business presentations as well as DTP and CAD/CAM — often at a cost of a quarter or less than systems delivering similar results.

The Amigraphics card from Hi-

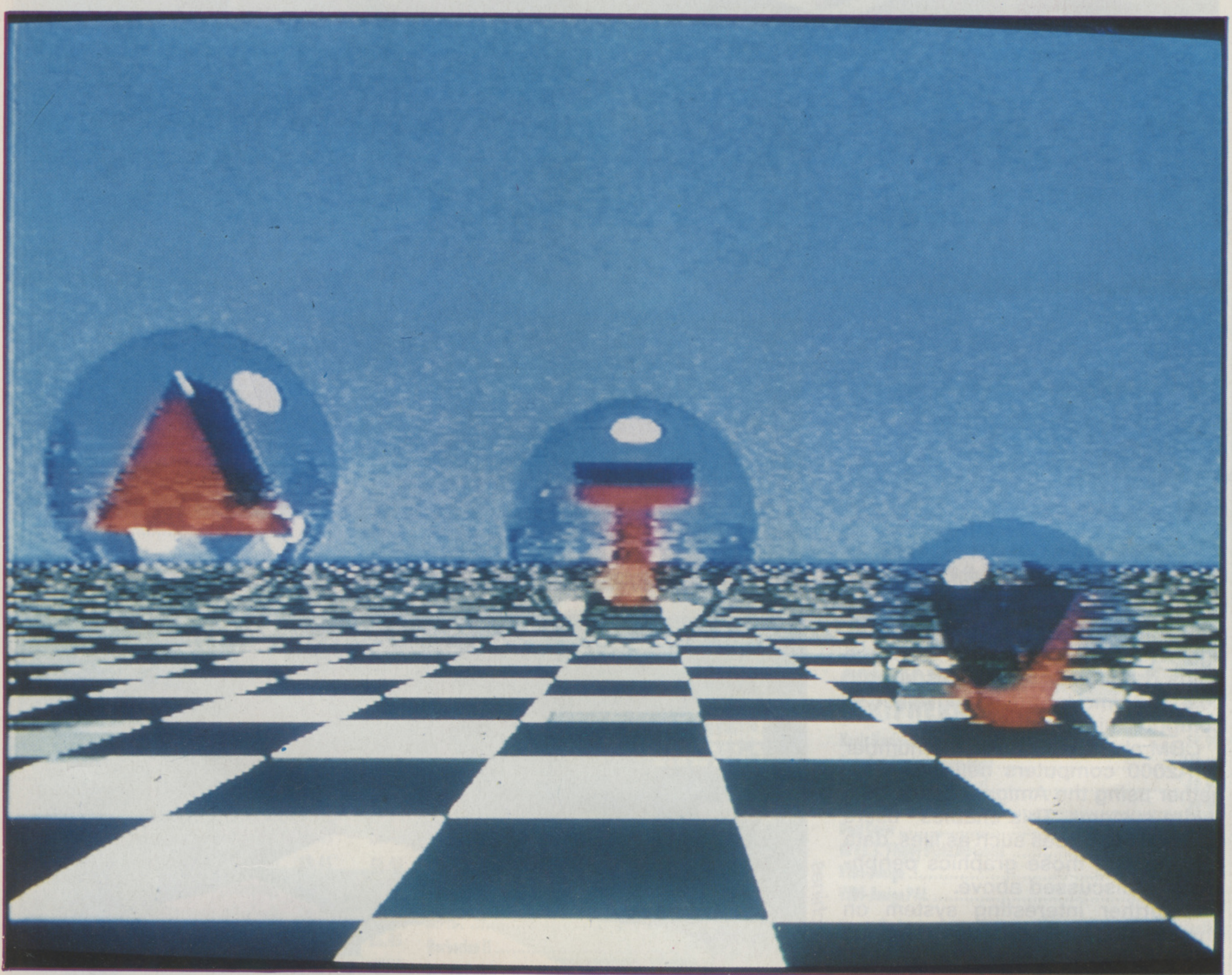


Hi-Tension

Triangle T.V.

Hi-Tension

NIC VISIONS

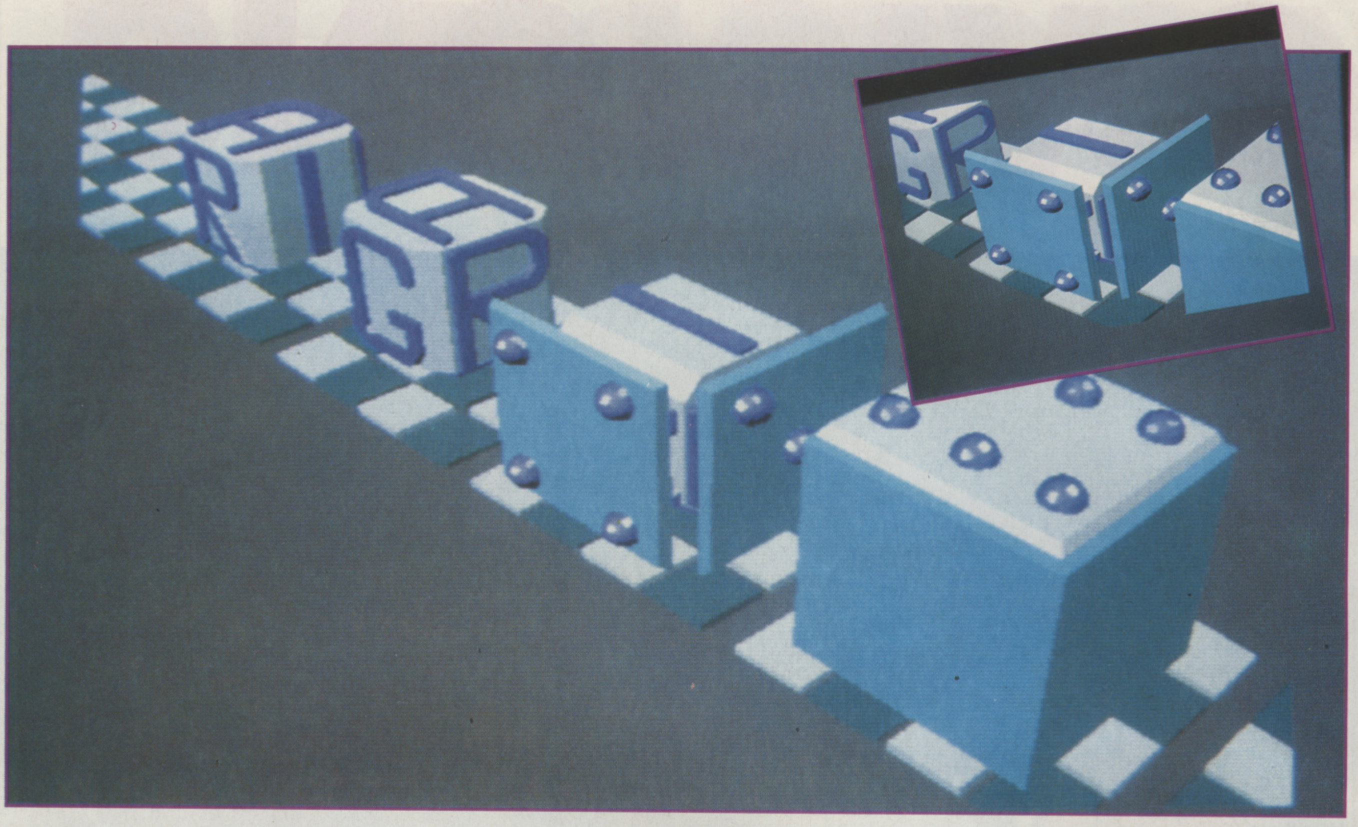


Triangle T.V.

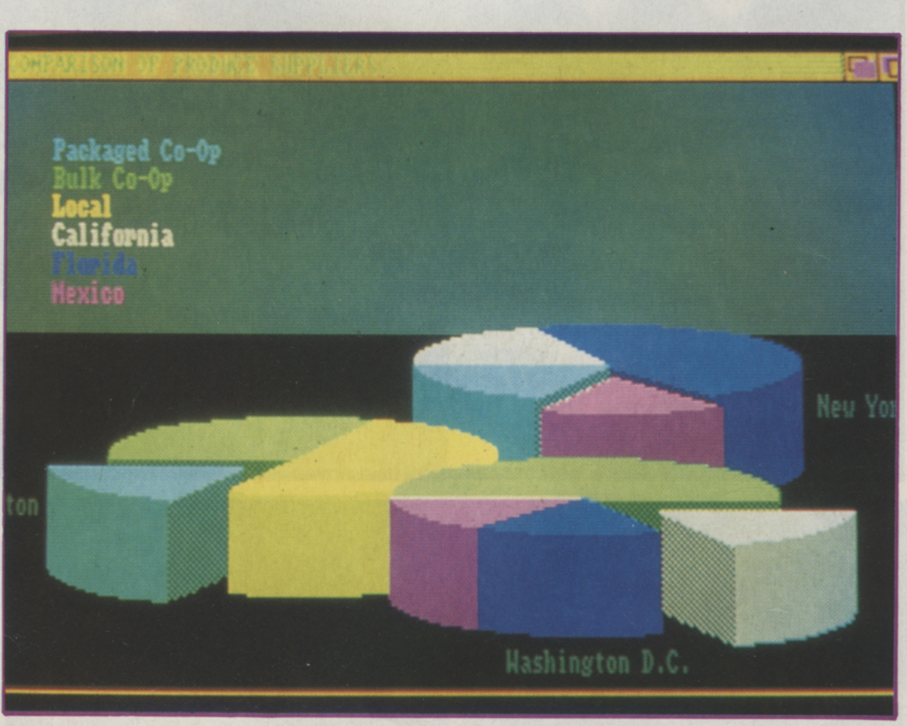
Hi-Tension

Tension was working with the A2000. This displays 256 colours on screen from a palette of 16.7 million at a resolution of 1280×1024. Also on show was the Caligari Professional from Techex (previewed in December AUI) which allows the user to manipulate a 3D image in real time.

The Sharp JX 300 scanner — with ASDG's Pro ScanLab interface — was the star of the Commodore Stand. Developed by ASDG, in the US but now distributed through their own company in the UK, the scanner package enables the user to scan in an image in 24 bit planes offering all 16.7 million colours. Also on board is the Postscript language which allows colour separations to be pulled into DTP presentations and output to a



Caligari



Commodore Business Machines

Linotron for typesetters and printers the under £100 entry level will add simplicity of operation to this package. This type of scanner package holds dramatic advantanges in both cost and time for anyone involved in computer aided publishing.

CBM also demonstrated a number of A2000 computers networked together using the Amiganet card from Hydra systems. This enables users to share resources such as files, data printers and those graphics peripherals as discussed above.

A further interesting system on show at Commodore's stand was the Colourline Test Animation system from Chromacolour. This provides professional full colour line testing for animation and shows great flexibility of use: the system would be equally useful for both presentation and educational purposes and could be employed anywhere from schools and colleges to design studios and advertising houses.

The astonishing progress made in computer graphics in recent years was obvious even in the spectacular demonstration on the many stands at the show. Household names like Quantel with their Paintbox are now offering 'cutdown' versions which look little different from the full power originals but at much lower prices.

We shall also see the results of widespread computer graphics in TV, video, computer entertainment and in the latest electronic buzzword — Multimedia, the combination of broadcast, barrowcast (cble), video and computerised input.

With high resolution monitors being paraded by Hitachi; thermal transfer colour printers from Ambitron; and colour copy systems from Ilford Photo Company, this years graphics show was a haven for anyone involved in computer aided publishing where we look to be on the edge of a revolution. The sheer visual power of the fantastic products to be seen was dazzling 3 whole days at the show would not have been enough to soak up all the available and desirable technology. It was awe-inspiring viewing; if you missed it this year be sure to go next, otherwise you may find that you are out of the picture on tomorow's world. *C.B.*

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More 64 Power

Be a Game Writer!

Peter Gerrard advises you how to get more power to your games writing elbow

Last month we looked at the topic of trying to earn some money out of your computer and thus try to make it pay for itself. This seemed to go down rather well (money being in short supply these days, it seems), and so I thought I'd continue the theme by looking at more general ways of submitting games rather than the very specific topic of just the one game that was covered last time around. We'll stick to the adventure/fantasy genre, since it is the one I know best. I've only ever tried to write one arcade game, which had about as much action as a heavily sedated tortoise, so I can't claim to know very much about either the writing or marketing of such games. Adventures and fantasy games, on the other hand, are very much grist to the Gerrard mill: even so, you should still be able to apply these guidelines to whatever field interests you specifically, be it arcade or adventure, or even strategy and spreadsheet.

Most of us play games, which is presumably why we read various sections of this magazine and then wander off into the night as Trollslayer Gerrard, but have you ever given a thought to the games themselves? How did they come to be what they are? Who designed them, who thought them up in the first place, who's getting the royalties from the sales? More importantly, why isn't it you? If everyone's got a good book in them, as that old adage has it, then everyone should have a good fantasy game in them. I've designed several games that have been marketed, submitted ideas that have been accepted, so if I can do it then I'm sure you can. Last month we read about just one such idea, Level 9's Scapeghost, but you can submit games just as much as you can submit ideas.

However, there are ways of submitting games successfully, or at least ways that will give you a better chance of success, and there are ways of ensuring that you find the nearest waste paper bin in the never ending game that is indulged in by office staff all over the world: waste paper basketball. One way of not submitting games was demonstrated by someone who once sent in a game to me in the hope that I would look favourably upon it and see fit to mention it in a national computer magazine. It was recorded over one of my old games. Very funny, very witty ha ha, but just as board game specialists Eldrich would not be impressed by a game scrawled over the top of one of their old boards, so I was totally unimpressed by that particular submission. Nought out of ten, no mention in national computer magazine. So, just what are some of these ways of trying to improve your chances of success?

The first may seem blatantly obvious, but many people fall down at this first hurdle. The game must be original, there is absolutely no sense in copying a game idea from company (a) and sending it to company (b) in the hope that they never look at each other's products. Of course they do, and even if you try changing names and certain events any sort of copying of that nature will soon be detected and not only will your game not get accepted, you might even get a law suit coming back at you. Your game just has to be original, otherwise you'll have very little chance of success. It must also be playable. In that I don't mean that it has to be as simple as, say, Space Invaders, but anything weighed down with twelve thousand rules that have to be constantly consulted is again going to stand next to no chance of succeeding. Rules are necessary, obviously, but too many "ah, you can't pick up that rucksack on the night of the second moon following the birth of a daughter to the family of Grolon" situations is asking for trouble. Only make things as complicated as they have to be, don't over-complicate things without very good reason.

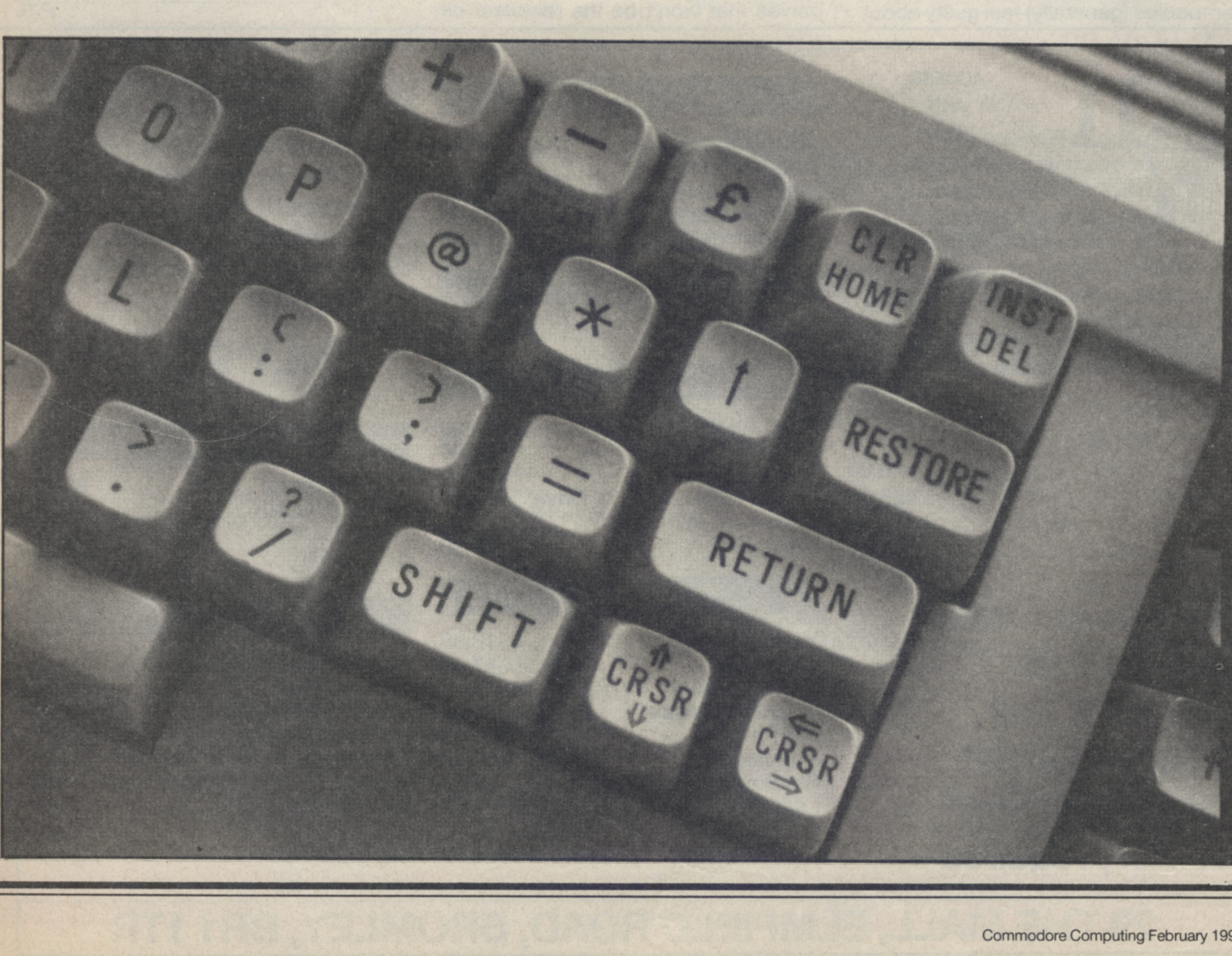
With that in mind, it might seem like a reasonable idea to look for a good book, or something of that nature (film, play) that hasn't yet been turned into a game. Copy that, in the sure knowledge of instant success because the book (or whatever) has been such a major hit itself. Ah, well, there's that teeny little subject called copyright, that which protects authors and their works. It also protects articles such as this, come to that, since I'm still alive and well and not yet dead for the statutory fifty years before copyright either ceases to exist or gets taken up by someone else. Or fifty years after publication, if said publication is posthumous (which I sincerely hope it won't be!). Check very carefully on the copyright of anything that you may look at in this sort of way, people are very zealous in guarding it, and if in doubt don't use it. Think up something original of your own instead. Plagiarism is a plague.

Having come up with something that is devastatingly original and bound to be a huge success, do explain how it all works to the people that you're submitting it to (and more on that topic later). They're not mind readers, and need to be told in straightforward terms just how the game operates and how it all fits together. Just as you would like to be told when buying a game yourself. Look at the ones that you like the most, and see how the rules are explained there. And not only the rules, but descriptions of any characters that might be involved in the game, situations that might arise, that sort of thing. Role playing and fantasy games can be fairly complicated affairs at times, and if you're not even sure about how you're supposed to be playing the game then you're not going to get very far. Consequently, people considering games for possible publication like to be told as much about them as possible.

And there's no point in being shy. If you think your game is better than anything else on the market, tell 'em so! Point out why, in your opinion, it outshines other games, if you genuinely believe that to be the case. Explain why it is better, what's original about it, why it stands out from the crowd. Don't wait for someone to think "hey, now THAT'S a good idea". Tell them it's a good idea! I don't mean just put something in for the sake of introducing an element that no other game has got: a one-legged gay, black wizard who used to be a coal miner until he hit on a new trade might appeal to some people, but not to many, I would imagine. Doesn't appeal to me, anyway. Also, bear in mind that you are going to be slightly biased towards your own creation, and others might not see things in the same light as yourself. But, talking about lights, don't hide yours under a bushel when it comes to submitting games. Sometimes, just sometimes, it pays to push yourself.

Now then, how are you going to submit your game? Will it be as a set of notes, or as your own computer program, or as something written using a computer utility, or what? I would say that, unless you're a very talented computer programmer, don't bother programming it. And if you ARE a very talented computer programmer then people should be giving YOU ideas to program, not the other way around. I prefer the written word when it comes to sending off ideas, although a short demonstration program of certain aspects of a game might not go amiss. For example, three little boxes with "graphics here, icons here and text here" would be okay if you were putting forward a game idea for a company that produced software for the computer that you've designed your demonstration around. In the long run it's probably best to stick to verbal descriptions and let someone else do whatever programming might be necessary. You don't have to submit a computer game, of course, there are many board and other games about, so your game may well make your decision for you here.

If you are submitting notes, then there are many golden rules to follow. You must, needless to say, be as neat and tidy as you possibly can. General layout has to be as attractive and readable as you can make it (without going TOO over the top), and preferably typed as well. No matter how neat your hand-



writing (and why do women usually seem to have neater handwriting than men? Is this a universal rule?), it is not going to make a good impression if your game scenario runs to some 30 pages of biro. Or pencil, which is unforgivable. I know that not everyone has access to a word processor or typewriter, but it helps a great deal if you can make that access. Nobody in their right mind will ignore a brilliant idea, no matter how it's presented, but it will help the chances of a reasonable idea if it at least looks the part.

Spelling and grammar are two other important points when it comes to your presentation. Nothing grates on the reader as much as a whole pile of spolling mistooks, like wot I have just made. If your spelling isn't so hot, get a dictionary. If your grammar isn't up to scratch, then it helps a lot if you read your submission out loud. Or better still, get somebody else to read it for you. You'll soon spot any obvious mistakes, and if it survives the reading test then you'll probably be all right.

Be courteous to the company that you are sending your submission off to, and include return postage. If it costs you (say) #1.50 to post everything, then put #1.50 worth of stamps in with it. At least that way you can more or less guarantee that you're going to get a reply, whether it is in the positive or not. Companies (generally) feel guilty about not using stamps that have been sent with the obvious intention of paying for any return postage.

Strangely enough, the next aspect of game submission applies equally well to board games, or indeed any other, as it does to computer games. Make sure there are no mistakes in it! Computer bugs are easily spotted, but others might be harder to weed out. If your idea is for an adventure/role playing book, one of those with "if you wish to cast the spell of Cloritz on the evil demon, turn to page 54, but if you wish to cast the spell of Nomin, turn to page 55" at the bottom of each page, make sure that you don't set up an impossible situation that has the reader going from page 55 to page 57, back to 55, off to 57, and so on. Easily done, and not so easily noticed at the time, but no reputable publisher will look kindly on anyone who makes that sort of mistake.

And speaking of publishers in particular and companies in general, do ensure that you send your idea off to the right people. It's no use sending a computer game design to a company that only produces books, or a book idea to a company that only handles board games. They simply won't look at it, no matter how good it is, and you'll have wasted your time more than theirs. It's surprising how many people send what are relatively good ideas off to companies that won't be the remotest bit interested in them. Do your research first, know your potential market, and then you know that your idea will at the very least get considered and not rejected outright.

The only point in favour of sending something to the wrong company is that you won't have to wait months for a reply, which you usually have to do if you've contacted the right sort of company. That is the last major rule in submitting game designs, be patient! The people you are dealing with are, on the whole, very busy souls who have little time to spare. They'll always look at a new idea, that's what they are there for, but don't pester them every five minutes if you haven't heard anything two days after you posted off your precious game. Give them at least six to eight weeks, and if you don't hear anything by then a polite letter should be the height of your impatience. But if you haven't heard anything by then anyway, the signs are not good.

Persevere, dear readers, and bear all of the above in mind when sending off the fruits of your labour. I guess that treating companies with respect is the major rule of all. You say you've never thought of sending a game idea off to anyone? Why not, if you can come up with a good one. And with that thought I wish you every success and more, much more, power to your elbow.

P.G.

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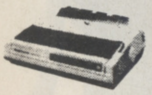

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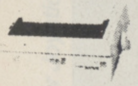

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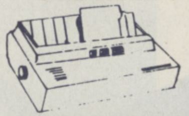

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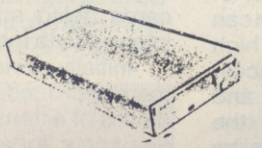

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INPUT DEVICES

From punchcards to a computer controlled by your eyes, it seems we need something between us and the computer. Or do we? Tony Horgan examines the matter

Within the central processor of any computer, information can be processed at very high speeds, but before the central processor can be set to work, the data and programs must be entered into the computer's memory. This is done by means of input devices which provide a vehicle for communication -an interface- between the computer and its users.

Some form of intermediate coding is required to bridge the gap between the language of human beings and the internal machine code language of the computer: humans are able to recognize and understand the relationships between numerals, characters and symbols, whereas within the internal store of a computer the various electronic circuits are only able to respond to patterns of electrical impulses. There are often various stages of translation between the original character representation used by humans and the internal code of the computer, punched cards being an early example of an intermediate medium.

Initially, during the course of a commercial procedure, a clerk might enter details of a transaction onto an original document (for example, an order form). A copy of this form would be dispatched to the data preparation centre where an operator using an automatic key-punch would punch the information into a card in accordance with a standard punching code. This card might then be checked by a further operator using a punched card verifier, and in this way the initial stages were completed and an item of data was represented as holes punched into a card. The cards representing a particular series of transactions would eventually be batched together and input to the computer via a card reader, which would read the cards and translate the information into a

Quickjoy 3 Joystick

Cruiser Joystick

series of coded impulses which could be transferred to the central processor and be stored in the computer's memory. The card reading head was often a photo-electric sensing device which was able to read signals. After a card had been read it was deposited in a stacker. The speed of card reading varied from one machine to another but an average would be in the region of 1000 cards per minute.

Paper tape was an input medium similar to punched cards and generally involved all the stages described above. First the data was punched into paper tape by means of a keyboard-operated tape punch, then it might be verified, and finally it was read into memory by a paper tape reader which might operate at about 1000 characters per second.

Paper tape readers and card readers were fairly reliable devices and were designed to input large batches of data, but although, as mechanical devices, they operated at high speed, they limited the operation of computer routines in which processing is carried out at electronic speeds.

They were largely replaced by devices such as key-to-disk units, which allowed data to be written direct from keyboards to a magnetic medium without the need for the intermediate process of producing punched cards or paper tape, which are now little used.

There are various programming and systems techniques which can be used to mitigate the limitations of these input devices, including the use of input buffers which permit peripheral units to be operated continuously at high speed. There is also the use of time-sharing techniques to enable the computer to perform other functions whilst waiting for input from a slow peripheral. With the development of on-line storage systems and multiprogramming a further range of input devices appeared; these are devices which are permanently connected to the computer but which are situated at distant terminals to record transactions as they occur. Here it is not so much the speed of the device which counts, but the fact that the complete system is able to deal with the transactions as they arise - in real time. It is then mainly a question of considering the economics of the number and type of input devices required in order to deal with the volume of transactions to be handled at each transaction point.

Another characteristic of these on-line input devices is that they frequently incorporate features to permit two-way communication; for example, intelligent terminals with visual display units can be connected via communications circuits to a computer. This connection may be over long distances or may be part of an in-house system. Here the operator may enter data directly into the system by typing on a keyboard and the computer may reply by causing a message to be printed directly at the inquiry terminal.

> **"The documents are eventually batched and an optical character reader is used to read the information on the documents directly in to the computer systems."**

Character recognition systems provide similar features; here it is often a question of prerecording data as characters on documents for optical character recognition (OCR) or magnetic ink character recognition. For example, in electricity billing, documents may be printed with optical characters giving descriptive data for each customer. They are given to meter readers who add marks indicating details of electricity consumed since the last reading. The documents are eventually batched and an optical character reader is used to read the information on the documents directly in to the computer system. Bank cheques printed with magnetic-ink characters are another example of this type of system. Although these character recognition systems do not

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A cordless mouse

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provide a direct on-line input to the computer they do allow data to be captured more accurately, speedily and economically than other more conventional systems.

VDUs have many applications as input devices in real time systems. They usually have keyboards to enable transactions or inquiries to be input directly into the central computer, and have cathode ray tube (CRT) display units to enable results to be presented to the inquirer.

There is, however, more to input devices than payrolls and filing systems. The most exciting developments for input devices are not occurring on the mainframes of banks and sorting offices, but on the home micro scene.

Computer game control has long been dominated by the digital joystick. Although the moving of a joystick is unlike almost any action you would perform away from a computer, its compatibility with a computer's on/off mentality makes it an excellent human-to-computer interface. That is fine for most games, but when it comes to simulating the real world, things get a little more complex.

A massive version of the Marcus Tracker Ball

The problem is that while the computer lives in a digital world, ours is analogue. That is, all the computer can actually understand is yes or no, 1 or 0, on or off. We living organisms on the other hand, can come to terms with varying strengths and degrees of things. Playing a simulation of a race around Brands Hatch for example, we may decide to negotiate a corner by turning gradually to gain the best line, before pulling over sharply to round the bend. Fair enough you may think, but the only option a digital joystick gives us is to turn or not to turn. Atari set the joystick standard with their VCS games console. With four switches, which allow control in eight directions with diagonals, and a single fire button, it is still the most popular game controller.

> ***"A tracker ball works just like an upturned mouse, so the user rolls the ball directly."***

The answer comes in a few forms: a mouse, a trakker ball, or a steering wheel (in the case of an arcade machine) would be the most common. As we know, these allow various degrees of movement, but to do this they have to convert our analogue input into a digital form readable by the computer. The way a mouse achieves this is to count how many times the rollers (which are moved by the ball) turn in each short space of time. This way, the computer has a solid figure to work from. A trakker ball works just like an upturned mouse, so the user rolls the ball directly. Whereas a mouse demands a clear, flat surface, over which to roll, the trakker ball stays put on the work surface, whilst giving a comparable degree of fine control, which makes it a favourite among graphic artists.

Analogue to digital conversions play a major role in the majority of input devices. A scanner for example, scans an image which could be made up of an infinite number of shades. In a similar fashion to a photocopier, it uses a laser to "pixelise" the image, and converts it to bits for manipulation within the computer, after which it can be output as film for printing. The same analogue to digital story can be told of many other input devices, such as sound and graphics digitisers, light pens, graphics tablets, and voice recognition devices, to name a few.

Touch sensitive screens, which just a few years ago were the wild inventions of science fiction novelists, are now in use in many offices, and voice activated software is becoming increasingly popular. Devices which can sense certain bodily movements are also appearing. Computer games in which the player wears a sensitised glove, along with special glasses to give all-round vision, are in development. Similar systems are also helping paraplegics, with machines that can be operated simply by eye movement! With all this technology helping us here and now, who could say how the human to computer interface will look in the future. Project the last few years' technological advances a short way ahead, and a direct hotline from brain to computer does not look such a wild dream after all.

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Are your words lacking a certain something? You know, that indefinable extra thingy, that would give them just that little bit more? You obviously need a decent wordprocessor, and what better choice than Audiogenic's Wordstyle?

Wordprocessing has never been so much fun! Since we installed it in the CCI offices last Thursday, so transfixed by its elegance and ease of use were we, that a whole year's worth of editorial material has been knocked up in a matter of days! Yes it's true, Wordstyle has ousted the former office favourites Kick Off and Stunt Car Racer, and now rates as the first choice for a bit of relaxation. In fact, we've made up a special version with a "boss key", which displays a mock game screen if the Ed is doing the rounds!

Veterans of the Commodore software scene, Audiogenic have given us no less than a finger-cramping TEN copies of their inspiring wordprocessing package! You could be one of a double quintet of winners, if you can correctly answer the questions below, put the answers on a postard, and pop them in the post to us. The first ten correct entries to spring forth from the bingo machine, will earn their senders a copy of Wordstyle.

1. Audiogenic won the CCI Oskars for Best Arcade Game and Best Sport Simulation, with which game?

2. Since when have Audiogenic produced Commodore software?

3. By what name was Audiogenic formerly known?

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WORD STYLE

Supersoft

Wordprocessing made easy and cheap says Anthony Mael of a 64 classic

Even if you start off by thinking of your Commodore 64 as just a games machine, you soon realise that it is a lot more. Over the seven or so years it has been around, it has found many more users than those who see it merely as a vehicle for driving games or a weapon to get rid of all aggression by shooting everything in sight. When the 64 came out it was regarded as being capable of providing the computing power to run businesses or scientific applications. And one of the major areas in which it scored highly was word processing, it meant, practically for the first time, there was available to the home user a real and powerful computer which let you carry out a considerable range of text operations, especially easy things like writing letters.

Many word processing packages were created for the 64, some good, some very good and some not so good. One of the best was Wordstyle, produced by Supersoft who have been writing Commodore computer software since 1978 when they started with the PET.

Unlike many 64 Wordprocessors, Wordstyle is still in production and has been updated many times. It now has the status of a classic program and has been going so long you can be sure it is 'bugless'.

Ringing Bells

Wordstyle is easy to use and works on both the 64 and 128 computers. It comes, a very important point this, in cassette form, and you save your text to cassette or disk.

There is nothing complicated about Wordstyle and of course, as you would expect for such a price, it does have its limitations. For example, it will only take 254 lines of text in a single document but that is enough to cover four A4 pages. You can then start other documents. It has some real life touches such as a bell pinging and a light flashing when you get close to the right hand margin, like a typewriter. In fact, the whole program is very little more difficult than using a typewriter which makes it ideal for the first time wordprocessor user.

Incidentally, even if you hear the margin bell, you do not have to change the line. The program automatically wraps around the sentence for you.

You current errors simply by typing, sorry keying, over the incorrect others and you can use the macro keys like F3 to shift you to the bottom of the page.

Technicolour Text

You can delete whole lines, very useful if like me you often change your mind about what you are writing or move blocks of text from one place to the other in your document with a single keystroke.

It will centre, set margins, reformat the text or change the text size. It will even let you have your text in anything from yellow and light grey to blue or purple, Word Processing in glorious technicolour!

One of the neatest ideas that Wordstyle permits is it lets you hold, in a separate area, a second document to the one you are working on - and then move it into your text when you want it. It works through a kind of window (not to be confused with the Windows program that runs on PC's and costs hundreds of pounds! Though Wordstyle does function on the same principle). You can even scroll the window or grab text from it.

Printers

Of course, you don't need a printer to use Wordstyle and you might find it fun just to start with it to get experience manipulating text. However, if you really want to use it properly you will require a printer. We don't know with which it will not work but there may be some!

Though Wordstyle was never created to provide competition to WordPerfect, the the world leader in W/P, (which costs about £300!) it is an exceptionally user-friendly and undemanding package. It has over the years been perfected by Supersoft one of the leading companies in the field who as with all their products give excellent support if you need them.

If you are starting out, or have just made up your mind to try wordprocessing on the 64 or 128, you could not find an easier or better value piece of software. Highly recommended - especially for beginners.

A.M.

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SUPERSOFT

THE NORTON UTILITIES

Len Keighley takes a tour around the latest edition of the Norton utilities

The latest edition of the famous Norton Utilities has now been released. The Advanced Edition, Version 4.5, builds on the previous versions by enhancing existing utilities and providing a number of new ones that even further advances the status of the Norton software in the PC community.

The first noticeable change to the package is a new manual entitled 'The Norton Trouble Shooter'. This book is aimed at helping the hard disk user to solve simple day to day running problems such as overwritten and erased files, through to major problems like a bad FAT or Root directory. It does this in a step by step manner which first of all diagnoses the problem, before passing on to the solutions that are available to get round that problem. Diagnosis is carried out by utilising a list of common problems and/or error messages and the results of running the CHKDSK utility. Having identified the correct symptoms of the problem in these lists a step by step procedure is provided to correct the problem. One of the options is to run the Norton Disk Doctor (NDD) utility which will attempt to automatically identify and correct the problem.

Enhancements

The enhancements to the software in the package includes changes to the Norton Change Directory (NCD) utility to provide a means of renaming directories and quicker navigation through the directories. The main Norton Utility (NU) program has also been amended to streamline navigation through the utility and now provides the facility for viewing and editing disk files and sectors.

The Speed Disk (SD) utility, a hard disk optimiser, now allows the user to specify a sort order which includes the specific placing of files or directories. Files can also be designated as immovable which allows files that may be accessed by a software package at a specific address to be retained at that address. The Format Recover (FR), for disk recovery after a format, has been amended to run even if its data file has not been created. Finally, the Wipedisk and Wipefile utilities have been upgraded to conform to the US Department of Defence standards for file deletion.

New Features

Six new software utilities have been included in this version.

The Batch Enhancer (BE) contains a number of sub-commands which allow interactive Batch files to be created. These include ASK (for checking data input), BEEP, BOX (draws rectangles of defined size, PRINTCHAR, ROWCOL (for cursor movement and text display), WINDOW (draws a definable window) and SA (for the setting of screen attributes, eg colour or brightness). Boxes and windows can therefore be defined on a screen on which the appropriate menu details can be printed.

The File Date & Time (FD) utility allows the date and time stamp of a file or group of files to be set or cleared as required.

The Norton Control Centre (NCC) is a utility which controls system hardware such as the VDU, Keyboard, serial ports and battery operated clocks. The settings can be saved to a file and therefore called up when the system is reloaded. Attributes available include the screen colour/format, keyboard rate, key repeat speed and cursor size.

The Norton Disk Doctor (NDD) is the most exciting of the new programs included in the package. As mentioned before, this utility will automatically find and correct any physical or logical error on a floppy or hard disk. The purpose of the software is to check your disk for sign of failure. Having found a failure, it will then flag the sector as bad. If the sector is currently being used, the software will then move the data to a known secure area on the disk and notify the user of its action, so that the file can be checked for completeness later.

The Safe Format (SF) utility performs the same basic function as that provided by the MSDOS FORMAT command. However, the SF command does allow for easier recovery if the format has been carried out by accident. Use of the utility is made easier by provision of a window menu system to select which type of format you require.

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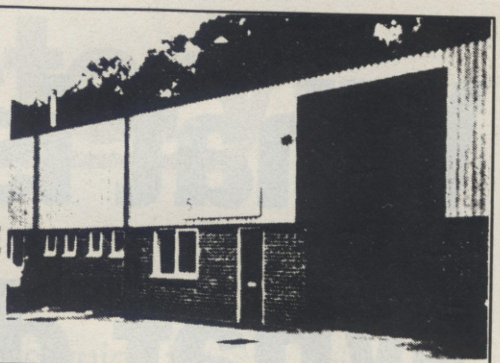

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The Directory!

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Back To Commodore Basics

Playing With Cards

Peter Gerrard examines darts, golf and says you can even use solitaire in your programming

We learn about Basic in all sorts of different ways, and this month we are (hopefully!) going to learn a little bit more by concentrating on the subject of cards. But just as our knowledge of Basic programming can blossom in many diverse areas, so can our knowledge of things generally. Take, for instance, the following case.

A friend of mine started a ferocious debate in our local hostelry a while ago. Pointing to the dartboard hanging on the wall (scene of many a triumph and disaster at the hands of Gerrard) he asked "how can you score 101 with three trebles?" In other word, by throwing three darts into the treble bed of various numbers, same numbers or different ones, how can you end up with a score of 101. Sounds easy at first listening, but I warn you that there will be no bendy Bullys going to the winners. Take your time, now, no need to rush.

The argument lasted for quite a while. I even tried a few combinations myself ("if you start with treble 16, that gives you 48, then treble 13 makes it 48 plus 39, that' 87, then ...") until the truth dawned. A little spot of mathematical thought came to the rescue: it is impossible to score 101 with three trebles because 101 itself is not divisible by three. A treble score on the dartboard must, naturally, be divisible by three, and as 101 isn't then the problem becomes unsolvable. It caused a nice argument for a while! I dare you to try it in your own pub, should you be old enough to legally enter such establishments. If nobody reaches the inevitable conclusion that it can't be done, leave them to worry about it until the following night. Then tell them the answer from a long way away.

We can see that 101 isn't divisible by three straight away, for the mathematical thought involved shouldn't be beyond most of us. But what about larger numbers, just to divert away from cards for a moment longer. A number is divisible by two if the last-digit in the number is even. That is, the number 376 is divisible by two, but 377 won't be. A number is divisible by four if the last two numbers in it are also divisible by four. For instance, 1376 is divisible by four (76 divided by four being 19), but 1374 isn't. But what is the rule for divisibility by three? When you've found that one out you'll see that if a number passes the test for divisibility by two AND three then it will also be divisible by six, two times three obviously being equal to six. A number can be divided by eight if the last three numbers in it are also divisible by eight, so that something like 1345424 will divide by eight, but 1345426 (an equally likely candidate at first glance) will not. Just as I left a gap between two and four I shall also leave one between the numbers six and eight and ask YOU if you can work out what the rule is for deciding whether or not a number is divisible by seven. Don't go leafing through the magazine, we haven't hidden the answer away anywhere and there are no prizes, it's just something to occupy your mind during the dark evenings.

I'll leave you with those two little problems to puzzle over while I move on to the real business of this article with another favourite pub pastime. We'll start with a short program that can be used for dealing out a set of playing cards into as random an order as possible. And if they don't play cards in your pub, be it bridge or brag, then you're obviously going into an inferior sort of establishment!

Apart from anything else, this program could also be used in all sorts of games for the 64 (and indeed most other Commodore computers with slight modifications) where a pack of cards needs to be dealt out. Patience games (and we shall see an example of one of those a little later on), poker games (strip or otherwise!), any of the whole vast range of card games that could easily be adapted for playing on the computer. So how does it work?

After giving the program a name in line 10, line 20 declares a variable for clearing the screen, lines 30 and 40 set up our colour scheme, then line 50 declares an array that will eventually hold each of the 52 cards in a standard pack. Note the imaginative array name. I know that the C64 will only recognise the first two letters of the array name, but it doesn't clash with anything else and it does help to remind you of what the thing is doing. As memory space is not at a premium here we might as well be as clear in our listings as possible. Back to the program.

Line 60 uses the internal clock in an attempt to be as random as possible. TI, the variable used in the RND statement, is a reserved variable in 64 Basic, and holds the number of jiffies, or sixtieths of a second, that have elapsed since the beast was turned on. The related string variable TI$ tells you the time in a rather more conventional manner, since TI$ is always six digits long and the first two digits will hold the hours, the next two

FIRST CARDS LISTING

```
10 REM CARDS
20 CL$=CHR$(147)
30 POKE 53281,0:POKE 53280,0
40 PRINT CHR$(158)
50 DIM DECK$(52)
60 X=RND(-TI)
70 PRINT CL$;TAB(15);"* CARDS *"
80 PRINT:PRINT:PRINT "SHUFFLING THE CARDS ...":PRINT
90 A$="A23456789TJQK":B$=CHR$(216)+CHR$(218)+CHR$(211)+CHR$(193)
100 FOR I=1 TO 13:FOR J=1 TO 4:DECK$=DECK$+MID$(A$,I,1)+MID$(B$,J,1):NEXT J,I
110 PRINT:PRINT "THE DECK:":PRINT:PRINT DECK$
120 FOR I=52 TO 1 STEP -1
130 A=INT(RND(1)*((I*2)-1)+1):IF A/2=INT(A/2) THEN A=A+1
140 DECK$(I)=MID$(DECK$,A,2):DECK$=LEFT$(DECK$,A-1)+MID$(DECK$,A+2)
150 NEXT I
160 PRINT:PRINT "IN SHUFFLED FORM: ":PRINT
170 FOR I=1 TO 52:PRINT DECK$(I);" ";:NEXT:PRINT
```

CARD GAME LISTING

```
10 REM GOLF BY PETE GERRARD
20 X=RND(-TI):FORI=1TO40:CR$=CR$+CHR$(29):NEXT:FORI=1TO25:CD$=CD$+CHR$(17):NEXT
30 CL$=CHR$(147):POKE 53281,7:POKE 53280,7:PRINT CHR$(31)
40 REV$=CHR$(18):ROF$=CHR$(146)
50 DIM DECK$(52),PILE$(7)
60 PRINT CL$;TAB(9);REV$;"* GOLF PATIENCE *";ROF$
70 PRINT:PRINT:PRINT"SHUFFLING THE CARDS ... ";
80 FOR I=1 TO 52:DECK$(I)="":NEXT:FOR I=1 TO 7:PILE$(I)="":NEXT:DECK$=""
90 A$="A23456789TJQK":B$=CHR$(216)+CHR$(218)+CHR$(211)+CHR$(193)
100 FOR I=1 TO 13:FOR J=1 TO 4:DECK$=DECK$+MID$(A$,I,1)+MID$(B$,J,1):NEXT J,I
110 FOR I=52 TO 1 STEP -1
120 A=INT(RND(1)*((I*2)-1)+1):IF A/2=INT(A/2) THEN A=A+1
130 DECK$(I)=MID$(DECK$,A,2):DECK$=LEFT$(DECK$,A-1)+MID$(DECK$,A+2):NEXT I
140 FOR Z=1 TO 7:PILE$(Z)=PILE$(Z)+DECK$(Z):NEXT Z
141 FOR Z=8 TO 14:PILE$(Z-7)=PILE$(Z-7)+DECK$(Z):NEXT
142 FOR Z=15 TO 21:PILE$(Z-14)=PILE$(Z-14)+DECK$(Z):NEXT
143 FOR Z=22 TO 28:PILE$(Z-21)=PILE$(Z-21)+DECK$(Z):NEXT
150 FOR Z=29 TO 35:PILE$(Z-28)=PILE$(Z-28)+DECK$(Z):NEXT
160 PRINT:X=0:Y=3:GOSUB 430:FOR I=1 TO 40:PRINT " ";:NEXT
170 FOR LOT=1 TO 5:FOR DRAW=1 TO 7:B$=MID$(PILE$(DRAW),(LOT-1)*2+1,1)
180 C$=MID$(PILE$(DRAW),(LOT-1)*2+2,1):X=(DRAW-1)*5:Y=(LOT-1)*2+1
190 GOSUB 430:GOSUB 440:NEXT DRAW,LOT:SA=36:NL=35:CT=16:OK=FRE(0)
200 B$=MID$(DECK$(SA),1,1):C$=MID$(DECK$(SA),2,1):PILE$=B$+C$
205 PRINT ROF$;CHR$(31);
210 X=21:Y=17:GOSUB 430:PRINT "T TO TURN":Y=Y+1:GOSUB 430:PRINT"Q TO QUIT"
211 Y=Y+1:GOSUB 430:PRINT"CURSOR KEYS MOVE":Y=Y+1:GOSUB 430
212 PRINT"RETURN TO SELECT":GOSUB 510
220 X=2:Y=14:GOSUB 430:PRINT "↑FI;
230 GET Z$:IF Z$="Q" THEN 410
240 IFZ$=CHR$(157)ANDX›2THENGOSUB430:PRINT" ";:X=X-5:GOSUB430:PRINT "↑FI;:GOTO230
250 IFZ$=CHR$(29)ANDX‹32THENGOSUB430:PRINT" ";:X=X+5:GOSUB430:PRINT "↑FI;:GOTO230
260 IF Z$=CHR$(13) THEN 290
270 IF Z$="T" AND SA‹52 THEN SA=SA+1:CT=CT-1:GOSUB 430:PRINT " ";:GOTO 200
280 IF Z$="T" THEN 410
285 GOTO 230
290 COL=(X-2)/5+1:IF PILE$(COL)="" THEN 230
300 L=LEN(PILE$(COL)):B$=MID$(PILE$(COL),L-1,1):C$=MID$(PILE$(COL),L,1)
310 FOR I=1 TO 13:IF B$=MID$(A$,I,1) THEN B=I
320 NEXT:D$=LEFT$(PILE$,1):FOR I=1 TO 13:IF D$=MID$(A$,I,1) THEN D=I
330 NEXT:IF B=D OR (B=13 AND D<>12) OR D=13 OR ABS(B-D)<>1 THEN 230
340 IF L=2 THEN PILE$(COL)="":GOTO 350
345 PILE$(COL)=LEFT$(PILE$(COL),L-2)
350 PILE$=B$+C$:NL=NL-1
360 FOR I=1 TO 15:X=(COL-1)*5:Y=I:GOSUB 430:PRINT "         ":NEXT
370 GOSUB 510:IF PILE$(COL)="" THEN 400
380 FOR LOT=1 TO (L-2)/2:B$=MID$(PILE$(COL),(LOT-1)*2+1,1)
385 C$=MID$(PILE$(COL),(LOT-1)*2+2,1)
390 Y=(LOT-1)*2+1:X=(COL-1)*5:GOSUB 430:GOSUB 440:NEXT LOT
395 PRINT ROF$;CHR$(31);
400 IF NL=0 THEN FOR I=1 TO 2500:NEXT:PRINT CL$;"YOU DID IT!!!":GOTO 415
405 GOTO 220
410 PRINT CL$;"THAT'S YOUR LOT!":PRINT:PRINT "YOU HAD"NL"CARDS LEFT, SO THAT MAKES"
411 PRINT "YOU"NL"OVER PAR!":OK=FRE(0)
415 PRINT:PRINT "ANOTHER GAME (Y/N) ? ";
420 GET Z$:IF Z$="Y" THEN 60
422 IF Z$="N" THEN PRINT "N":PRINT:PRINT "BYE FOR NOW.":END
424 GOTO 420
430 PRINT CHR$(19);LEFT$(CD$,Y);LEFT$(CR$,X);:RETURN
440 IF C$=CHR$(216) OR C$=CHR$(193) THEN PRINT CHR$(144);:GOTO 445
441 PRINT CHR$(28);
445 PRINT REV$;CHR$(176);:FOR Z=1 TO 3:PRINT CHR$(192);:NEXT Z
450 PRINT CHR$(174):Y=Y+1:GOSUB 430:PRINT REV$;CHR$(221);B$;C$;" ";CHR$(221)
460 Y=Y+1:GOSUB 430:PRINT REV$;CHR$(221);"    ";CHR$(221)
490 Y=Y+1:GOSUB 430:PRINT REV$;CHR$(221);" ";C$;B$;CHR$(221):Y=Y+1:GOSUB 430
500 PRINTREV$;CHR$(173);:FORZ=1TO3:PRINTCHR$(192);:NEXT:PRINTCHR$(189);:RETURN
510 X=15:Y=16:GOSUB 430:GOSUB 440
512 DE$=CHR$(157):DE$=DE$+DE$+DE$
515 X=0:Y=23:GOSUB 430:PRINT ROF$;CHR$(31);"TO REMOVE = "DE$;NL
520 X=21:GOSUB 430:PRINT "TO TURN = ";DE$;CT:RETURN
```

the minutes, and the final two the seconds that have elapsed since powering up. Use the MID$ command to split it up into its separate components for a nice, legible display.

Lines 70 and 80 print up some information on the screen for the user, and then we can get really started on dealing out those cards.

Line 90 sets the ball rolling by declaring two variables. The first of these, A$, holds the rank of each card. As there is no little symbol for the number ten then I've just used the letter T to represent that number, with JQK being jack, queen and king, A stands for Ace, and the rest are just numbers. The second variable, B$, holds the suit of each card, contained in the four special characters indicated by the CHR$ variables. They're the ones near the left hand side of the keyboard, normally accessible using the CBM Logo key: every computer should have card symbols available, but very few do.

Line 100 uses two loops to put the cards in order in the variable DECK$, which is printed on the screen in line 110 so that you can see what it looks like. It simply contains every card in the pack in strict order, with Aces first, twos second, and so on. Line 120 sets up a loop to enable us to extract one card at a time from this DECK$ in order to start setting up and dealing out our cards. We do this by generating a random number in the range indicated, then increasing it by one if it's an even number. This is so that in line 140 we start extracting cards from DECK$ with a rank, not a suit. If you think about it for a moment, DECK$ holds the cards in the order ACADAHAS, or Ace of clubs, Ace of diamonds, Ace of hearts, Ace of spaces, and then on to the twos. If we had an even random number we'd be extracting the club of aces, so we increase it by one and let ourselves draw the ace of diamonds instead. It all helps to keep the rest of the program running ship shape and Bristol fashion.

We continue until all the cards are dealt, before lines 160 and 170 show us the now random order of the cards. A useful routine for card games, as I said, so perhaps some of you would like to work on a listing that might be suitable for publication in CCI. We'll get to just such a listing a bit later on.

But first, let's see if we can get the old grey matter working on a little problem or two, which will also require a little spot of programming. You may be pleased to note, then, that in order to try to solve the puzzle coming up in a moment you are going to have to make some alterations to the program as it stands. Learning Basic is what it's all about, and now's your chance!

In its current state the program effectively shuffles and deals out 52 cards in a random manner. From these

52 cards we could easily concoct, say, four hands of bridge, or something of that nature, but since this is all about using brain we're going to take things that little bit further.

You must have seen various expert card dealers on television or in the cinema, a scene from a casino perhaps, who manage to shuffle the cards with a grace and panache that is beyond most of us. It's certainly quite beyond me. Quite often they will use a particular type of shuffle whereby the deck is split in two, one half in each hand, both halves containing 26 cards.

If we start with all the cards in a particular order, repeating the above procedure 52 times will get them back into the same order again. But if we remove two cards, to give us a pack of 50 (any two, it doesn't matter), how many times do we now have to repeat the procedure so that we get back to an original starting point again? I warn you, the answer is not 50! And if you sort that one out, how many times does it take with 16 cards removed?

Just make a few alterations to the listing and you should be able to work out the answers to the above two problems, but I'll give you a clue to help you on your way. The first answer is a bit tricky and the second one's closely related to the secret of life, the universe, and everything, in a very special sort of way. No help at all? Oh well, you'll just have to do some work on the program then. And speaking of programming ...

Earlier on in our discussion we covered the routine that I use to imitate the shuffling of a deck of cards. Great fun can be had with a routine like this on the 64, and I did mention that it might be a good idea for some enterprising reader to write a card program of some kind using this routine and to submit it to CCI for possible inclusion in the magazine. Before you all start attempting to do this I have taken the proverbial bull by the horns and written such a program myself. I have delved back in time to do so, and picked on one of the older forms of card patience as my example. It works very well on the 64, and is rather tricky to solve.

But first, the rules.

Like all games of patience, the objective is to move cards about in accordance with a pre-determined set of rules, and end up with all the cards in a particular spot. In many of them, skill plays no real part, and cards can be moved about hither and thither without really thinking about what you're doing. Other than, that is, making sure that you do not overlook a card. In this so-called Golf Patience, that is definitely not the case. To quote the classic book Hoyle's Rules of Games: "Golf has scope for a fair amount of skill, and it makes one of the best double solitaires", solitaires being the Hoyle term for patience. This program won't play doubles, but I leave that as a challenge to the reader (as they say). So, skill as well as the ever-present element of luck.

Incidentally, if you haven't got a copy of Hoyle's Rules of Games then I strongly urge you to get one. It only costs a few quid in the paperback edition that I've got, and it's a superb descriptive piece, covering almost any pre-computer game you might care to mention.

Back to the game. Seven rows of cards are dealt out face up, with five cards in a row. The next card is dealt on its own, also face up. This forms the start of what is usually referred to as the foundation. The remaining 16 cards form your hand. The object of the game is to move all the 35 cards in rows onto the card at the bottom, or the foundation in other words. If no move can be made, a card can be turned up from the hand and played onto the foundation. Play continues until all the cards are removed, or no further cards are left to be turned up. There is no re-deal allowed.

"The object of the game is to move all the 35 cards in rows onto the card at the bottom, or the foundation in other words."

And the rules for moving cards onto the foundation? Suits are of no importance, only rank, the cards ranking from Ace (low) up to King. If a card is of rank one higher or lower than the card on the foundation, then it can be moved there, but the cards are not circular. That is, a sequence might be 6-5-4-5-6-7-6, but you cannot play 2-A-K-A-2 or Q-K-A-K-Q. In fact, a King cannot have anything played on it at all, so that you have to exercise considerable skill in manipulating the cards so that you can play a sequence like J-Q-K.

At the other end of the deck, you can play 3-2-A-2-A-2-3 if you have the cards for it. It's only a king that prevents you from playing anything else. That, and the lack of a suitable card, of course!

I have seen one version of this game where you are allowed to play a queen under a king, and so build up a sequence like J-Q-K-Q-J-Q, but I make no such concessions to you here.

Despite that it seems to be fairly easy, but I can assure you that it is not. Only once, in testing this program, did I actually manage to move all the cards onto the foundation. It doesn't matter if you've got any cards left over in your hand, incidentally, it's only the removal of all the others that we're after. And one last thing before we consider the listing. It is called Golf Patience because the less cards you have left at the end, the better your score. Like golf, where the fewer strokes you take the better your final score. So, the computer delivers its verdict on your performance in terms of par: end up with five cards left, and your score will be announced as five over par. It might be the only game of golf where it's impossible to break par! Apart from me attempting a round at St. Andrews, that is.

And onto the listing. The card shuffling routine, from lines 70 to 130, should be familiar from earlier on and as such needs no explanation. Suffice it to say that 52 cards are stored individually as elements of the array DECK$(). The first few lines of the program are also fairly straightforward. Declaring variables for turning reverse print mode on or off, to avoid filling the listing with little blobs (REV$ and ROF$), variables for moving the cursor around by the routine in line 430 (CR$ and CD$), and the variable CL$ for clearing the screen. The random number generator is set by using the internal clock (line 20) in the same sort of manner that we described earlier.

I've said that seven rows of five cards each are dealt, and they are stored in lines 140 to 150, with lines 170 to 190 drawing them on screen via the subroutines at lines 430 and 440 (to 500). The first card from the hand is dealt out in lines 200 to 212, with a little help from the subroutine from line 510 to 520, and these lines also print out the on-screen instructions. After a prompt has appeared from line 220 we're ready to play.

Obviously we can quit straightaway (line 230 and off to line 410), but otherwise we either move the cursor about (lines 240 and 250), select a card to be moved (line 260 and off to 290) or turn over another card from the hand if there are any left (lines 270 and 280).

I'm sure such a thing would be most welcome at CCI Towers, and it shouldn't be too much of a problem. By doubles version I shall refer to Hoyle again. Two can play double golf, each playing his own game with his own pack, and scores can be compared at the end. People may like to play nine "holes" (to keep the golfing analogy going) for the lowest cumulative score. In this instance, any player who manages to remove all the cards can count any left remaining in his hand as a minus score, deducting this from the overall total.

Another way of scoring a nine hole game is to give one point to the winner of each hole, or a half if tied, and five points to the lowest overall cumulative total. Rather like match play, but I would suggest that you don't get too carried away and attempt to emulate the Ryder Cup.

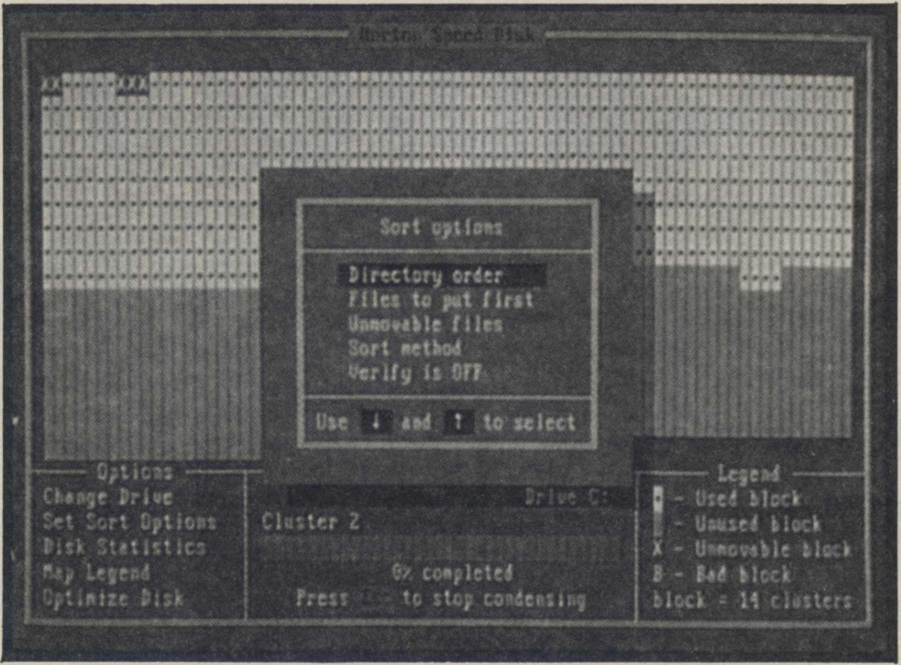
Well, it's one way of improving your programming, and I'll be back to talk about something else next time around. Fore! *P.G.*

continued from page 32

The Rest

For those of you unfamiliar with the Norton Utilities the following are the other utilities available within the package that have remained unchanged in this version. Directory Sort, Disk Information, Disk Test, File Attributes, File Find, File Info, Format Recover, File Size, List Directories, Line Print, the Norton Integrator (a organiser utility for the Norton software itself), Quick Unerase, System Information, Time Mark, Text Search, Unremove Directory and Volume Label. Most of these are self explanatory and all are fully described in the manuals. Most of them fall into three basic functions, Information, Search and Display.

The package is completed with another manual entitled 'The Norton Disk Companion'. This book provides an introduction to the inner workings of the disk drives, both hardware and software. For users new to hard disks this is a useful book to read.



The cost of all this is 92, which for my mind is money well spent, for I feel that it is becoming increasingly important for hard disk users to have software available of the Norton type to help make full use of the system. Even more important than this is the need to be able to recover from a failure of your disk media. The Norton Utilities provides both of these in a single package.

L.K.

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Compunet's Realm -

A New Phase or End of an Era?

On leaving University I joined a software house to develop factory automation software. There I met Roy Trubshaw who described to me the computer game he has been creating at Essex University. At the time micros were not really cheap enough to be used as games machines but adventure games like Zork were available for minicomputers and bigger machines.

Roy explained that his Multi User Dungeon, MUD, was an adventure game like Zork but with one difference - many of the characters an adventurer met in the world of MUD were real. That is rather than being computer generated they were actually other players logged into the mainframe.

MUD allows players to do everything they would expect to do in a normal adventure game. But in addition they can communicate amongst themselves. This puts a totally different emphasis on the game. Instead of automatically fighting every dwarf you come across it becomes worth having a talk to see if he has any interesting information or is interested in organising a pact.

I thought nothing more of this game until a year or two later when I bought a Commodore C64 and a Commodore modem. It didn't take long after logging in to Compunet for the first time to discover that MUD was running on the system and it was a big hit. In fact many Compunet users only rarely appeared from the confines of their Dungeon to try out the various other facets of the system.

Sadly when Compunet moved from renting time on a mainframe to run on its own custom built minicomputer MUD was left behind. But all was not lost. Federation II a multi user space game soon took its place creating a completely new sub-culture within Compunet.

For those of a more Tolkienesque persuasion Federation II perhaps lacked something of the atmosphere of MUD. However a worthy successor has at last appeared in the form of 'Realm'.

GOTO REALM takes the user to a directory containing the 'link' to the game and almost sixty pages of documentation on how realm is played.

Realm starts up just like any other adventure. If new to the game the player is prompted for the details of his persona, the character he will control in Realm. The persona's race (Human, Elf, Halfling etc.) and class (for example Warrior, Ranger or Priest) are defined and the realm is entered.

> ***"Unlike single user games new users often receive help from players on higher levels that have mastered the art of magic."***

The realm is made up of nine diverse areas including an abbey, castle and mines and the aim, like most adventures, is to gain points, mainly by collecting treasures. Unlike single user games new users often receive help from players on higher levels that have mastered the art of magic.

There are a wide range of commands that allow players to interact with each other. FROWN, SMILE, and SOB are just some of the commands that allow players to show their emotions to others in the near vacinity. Players can talk to each other, and SHOUT at everyone nearby, they can give each other objects and steal them back again.

Realm also boasts an impressive fight system that gives players not only the choice of various weapons but how they are used. Thus not all interaction needs to be constructive!

As more points are accrued players gain strength, stamina and charisma until they eventually become an 'Immortal'. They are then able to defeat any 'mobiles', computer controlled monsters that wonder the Realm, and use, magic to help, or hinder other players.

It's at the highest levels that the resemblance to MUD becomes apparent. Once certain levels of points are reached players obtain access to extra commands that allow them to manipulate the game in more sophisticated ways. In this way Wizards and Demigods can guide the flow of the game for lesser mortals.

Realm costs £1.50 an hour in addition to normal on line charges to play.

The Compunet host computer is in London but users from all over the UK can access it at local phone rates by dialling into the ISTEL computer network. ISTEL have network 'nodes' in most major areas of population so that the majority of the population are only a local phone call from their nearest node.

To log on the Compunet software running in the users Commodore C64 or Amiga phones a local ISTEL node and once connected instructs it to set up a path for message to pass through the network to the Compunet computer. In this way Compunet users phone bills are minimised.

Unfortunately a dispute between ISTEL and Compunet has led to ISTEL no longer accepting Compunet traffic. This means that users can now only access Compunet by ringing a London number(01-997-5422), making it much more expensive for many users.

In an attempt to ease the financial blow to users while they negotiate with ISTEL or find another network to provide nationwide access Compunet management have dropped all on-line charges, other than those for its multi-user games, and have stopped billing users. This is good news for users hit by a long distance phone bills but obviously the company will only be able to bear the lack of income for a short period.

By the time you read this Compunet will probably have arranged new nationwide network access. If they havn't the future looks bleak for the future of both Compunet and Realm.

J.L.

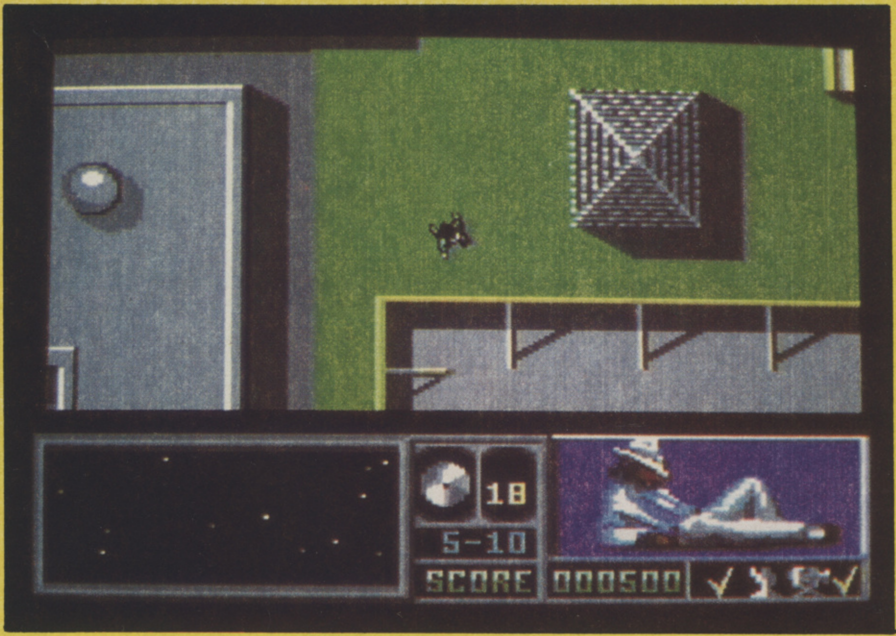
Hostages

Infogrames

Move over Bodie and Doyle, this assignment is for the real professionals, known as the T.I.T.s (Terrorist Intervention Team). An embassy has been taken over by a group of ruthless terrorists, and you and your team are called upon to regain control and free the hostages.

You first have to assemble your marksmen outside, and cover the three sides of the embassy. To position your marksmen you have to guide them to one of the three crosses marked on a map, while avoiding the terrorists' searchlights. This is the first of three stages in which you can walk, run, crawl, roll out of danger and dive over walls for cover, as the screen scrolls smoothly with your man. If the searchlight picks you out, you will be shot at and your energy will be reduced.

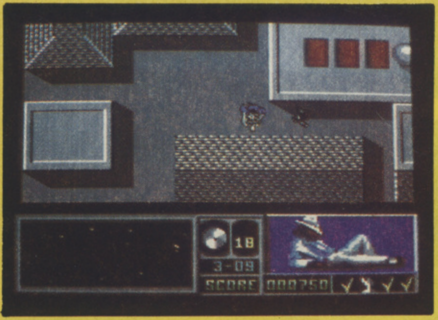
> *"The idea is to shoot all the terrorists but none of the hostages."*



Once you reach a cross you simply walk or dive, depending on the entrance, into your cover position. When all your men have been positioned correctly you're ready for the next stage.

If you have ever played Prohibition, you will get the idea of the next stage, in which you have to shoot the enemy who occasionally appear at the windows with their hostages. Be careful not to shoot the hostages though, or your game will be over. Aim your target around the screen and wait for someone to appear at a window, but if you can't see anyone then try your hand at abseiling.

Here you have to descend the embassy's walls and smash through one of the windows to enter the building. This is where the third stage comes into action. Inside the embassy you are given first person perspective - a view that allows you to see as if you were actually there. A map in the corner of the screen shows a plan of the floor which you are on, with an arrow indicating your position and colour-coded dots for the hostages and terrorists. The idea is to shoot all the terrorists but none of the hostages. Then take all of the hostages onto the windowless third floor, where they will be safer. Or another way to complete the mission is just to kill all of the terrorists in the embassy.



The depth of playability - what with the three different stages - makes the game one that will last for a fair bit longer than your average beat 'em up, with plenty of variety and action on every stage.

The graphics and animation have been worked on very carefully, especially on the main sprite which rolls and dives around in a truly realistic fashion. Sound too is good, with a catchy title tune and effective in-game sounds. Hostages can definitely be classed as a very original game and one that will be long lasting, but just lacks a little something to make it outstanding.

D.H.

Graphics: 88%
Sound: 79%
Playability: 78%
Overall: 79%
Price:
£12.99 (disk)
£9.99 (cass)

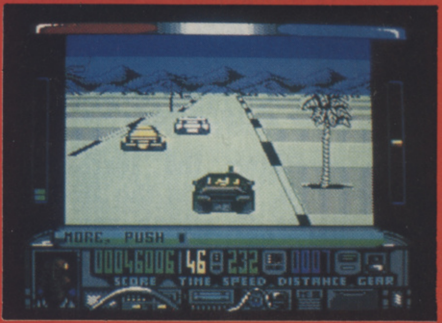
Chase HQ

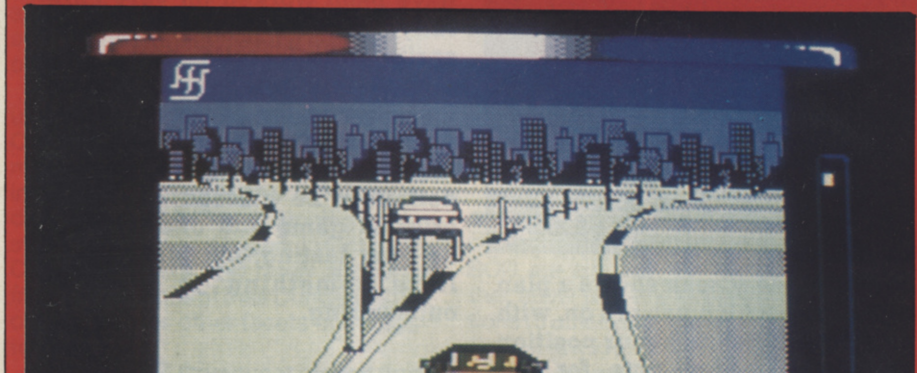
Ocean

During its development, little was heard of 64 Chase HQ, and prior to its release, not even a screenshot had materialised. A scruffy, poorly programmed conversion along the lines of WEC Le Mans seemed a likely result. That potential disaster has been averted, and the outcome is a game which looks remarkably similar to the Spectrum version.

"Just another Outrun clone" is the first impression given by Chase HQ. Anyone who's spent time and money on the coin-op will know that's not true of the game. The scenario is as detailed as it needs to be. You and your partner work for a special unit of the police force, known as Chase HQ. This bunch of closet Starsky and Hutch fans specialise in high speed car chases.

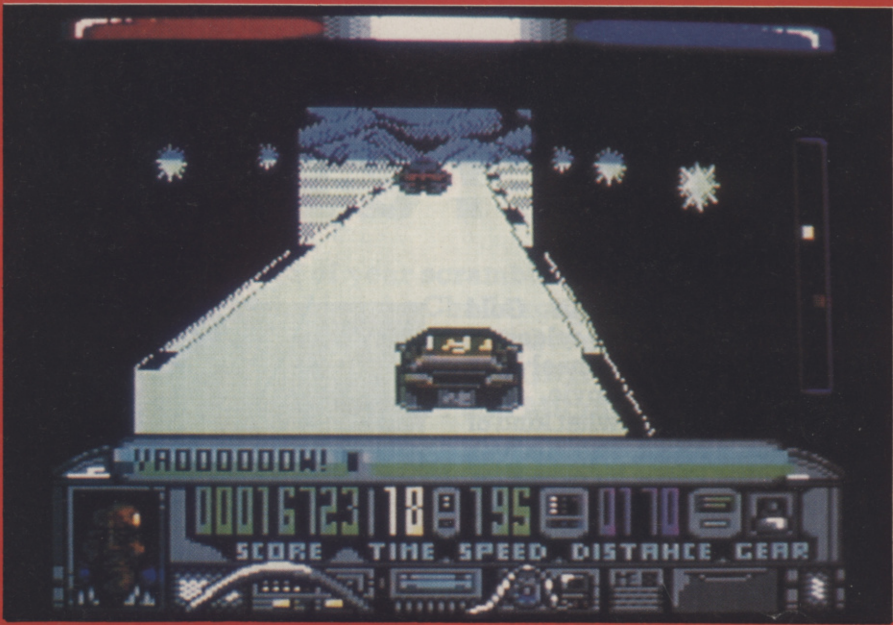
Your day starts out with a call from Nancy at Chase HQ. Via your hi-tec dashboard, she informs you of a criminal speeding out of town in a white British sports car, which turns out to be a Lotus. The first half of each level involves catching up with the escaping car within the time limit. After dodging a few slower cars and negotiating the early sweeping bends, you're confronted with a fork in the road, with an arrow indicating the quickest route. A proper forking road has never been seen on the 64, but here the effect has been recreated admirably, although it does reverse the G-force, pushing you onto the inside of the bend.





Once you spot the villain, the second phase begins. Politely asking the driver to pull over will get you nowhere. There's only one way to stop these hardnuts. Ignore the "Baby on Board" sticker in the back window and ram him right up the backside! The clock resets to a new time limit, and a damage meter appears on the screen. A single shunt isn't enough; instead you have to continually ram the criminal until he's forced to stop his wrecked car. No sooner have you caught one fleeing villain, than a report of another comes over the radio, and it's on to the second level.

The first thing you notice about 64 Chase HQ is the predominance of monochrome graphics. The game window uses around half the screen, with the road and scenery drawn in hires mode, and the cars built from multicolour sprites. As you'd expect, the graphics move rather jerkily, but are compensated for by the tunnels, forks and neat undulations of the road. However, due to the small screen size and lack of realistic sound effects, it all has a less exciting feel than the coin-op. It doesn't have the speed or fluidity of Power Drift, but at least it has all the gameplay features of the original. If you'd envisaged a big, fast and colourful conversion, you may be disappointed. However, if you can do without the speed and graphical splendor, I can strongly recommend Chase HQ.


YAOOOOOOW!
00016723
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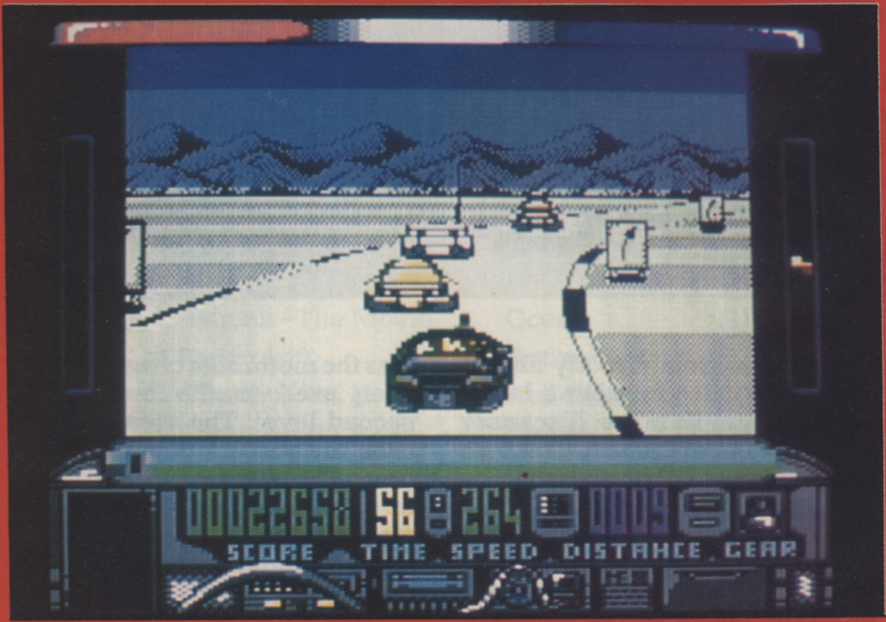
0170
SCORE TIME SPEED DISTANCE GEAR


00022658
56
264
0009
SCORE TIME SPEED DISTANCE GEAR

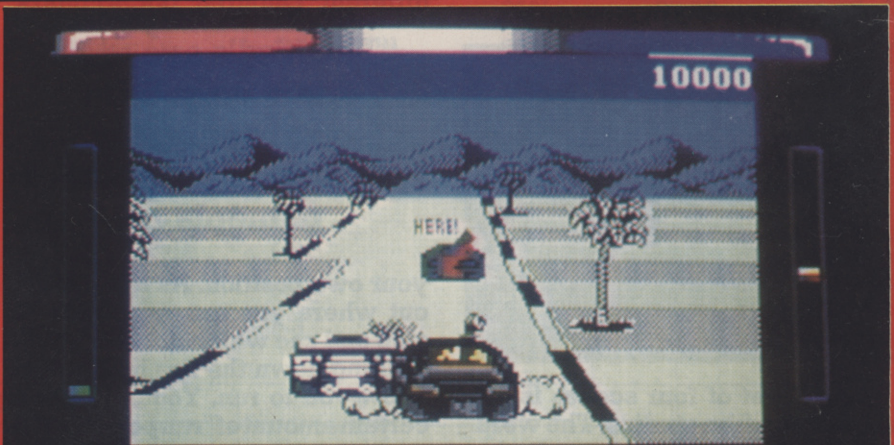
Graphics: 68%
Sound: 20%
Playability: 71%
Overall: 70%
Price: £9.99 (cass)
£12.99 (disk)

AMIGA

The job of the Amiga conversion was given to Teque, programmers of the recently released Continental Circus. Although it seems a little slow to begin with, it all feels suitably speedy once you get into it. The forking road is there, as are the tunnels, hills and short off-road sections. As well as looking like the coin-op, it also sounds just the same. Nancy has been sampled from the coin-op, along with many of your co-driver's comments. Your Porsche skids with its original tyre-squeals, and your right hand man hoots as you kick in the turbo. Only the least important graphical frills have been omitted (such as the naff cloud effect), and all the gameplay has come across extremely faithfully. You'll not be disappointed.

T.H.

Graphics: 91%
Sound: 89%
Playability: 92%
Overall: 88%
Price: £24.95

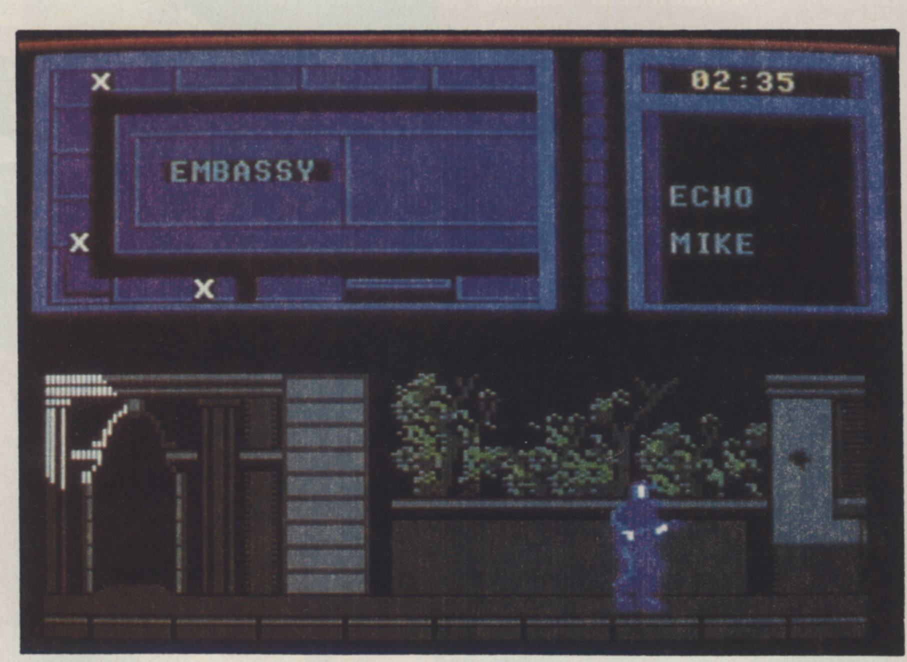

10000
HERE!
00034433
50
223
0002
SCORE TIME SPEED DISTANCE GEAR

Moonwalker

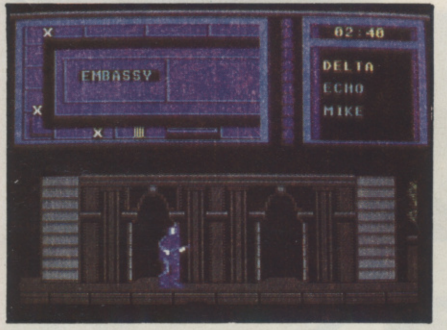
US Gold

I wonder if, when US Gold bought the rights to release a game based on Michael Jackson's Moonwalker movie, they bothered to think just what kind of a game would result. The film was a compilation of tracks from Bad, with a sickly anti-drugs storyline connecting the songs. For fans of his music, the film was great (as long as you could stick the ego-tripping and wet plot). As a foundation for a game it was a lot weaker, and that's shown through in the end product.

> **"To escape the attentions of his followers, he has to find seven parts of a rabbit suit"**



After a promising intro, in which MJ's feet walk across the screen before transforming into a Moonwalker logo, the game takes itself down a peg with a weedy version of Bad. As with all the music in the game, only the tune has retained any semblance of the original version, so you'll not be hooking it up to your stereo in a hurry.



The first of four scenes is set around the film studios. The word is out that MJ is on the loose, and a pack of autograph-hungry fans are after him. To escape the attentions of his followers, he has to find seven parts of a rabbit suit, collect four other "special items", and make his getaway on a motorbike. The view is from directly above, with the studios forming a large, but fairly simple maze. A scanner at the bottom of the screen shows the position of MJ (that's you), the fans and the items to be collected. The flashing dots indicate which items should be picked up next. It would have been helpful to have a different coloured dot to mark your own position. As it is, to find out where you are, you have to stop and see which dot stays still. Holding down the fire button will allow you to run. You only get a certain amount of "run power", and once that's been used up, you're forced to walk around at an annoyingly slow pace, until you've mustered the strength for another burst.

> **"The bird's eye view offers very little opportunity for spectacular graphics or gameplay."**

One scene which could have been made into a decent game, was the motorbike chase. This has been used as the basis of the second level. The view and controls are just as before, but this time it's a bit faster; disappointing to say the least. The bird's eye view offers very little opportunity for spectacular graphics or gameplay.

Moonwalker wasn't everyone's cup of tea, but no one could deny it was one of the most extravagant films of recent years. You would assume the game would follow suit, but it does the opposite. Other than the title screens, it's extremly bland to look at, tedious to play, and does no justice to MJ's music. Do yourself a favour; buy the video instead.

T.H.

Graphics: 38%
Sound: 55%
Playability: 35%
Overall: 36%
Price: £9.99 (cass)
£12.99 (disk)

CHART SHATTERING EVENTS !

So the old Batflapper flew into the end of year scramble and came out beeping away with the Number One in his grip. Challengers Powerdrift and Ghostbusters II finished with a strong run but failed to push Batters off the Top Spot. There are fournew entries this month with GB II the highest at Three. Ocean'sUntouchablesshot its way into Five and Microstyle's hot Stunt Car Racer out raced Domark's Hard Drivin' by two places in at Six.

With so many heavy games hitting the Charts this month, you'd think that there would be nothing much left for later. Don't you believe it. Ocean alone have some real biggies they are holding back till the Gaderene rush (you've never heard of the game? shame!) is over. Who said the 8 Bits have kicked the bucket?

For the Amiga, Xenon holds onto the Big One (for the third month in the row. Yes we did boob last month by not showing its previous place! Simon says sorry!). But there are three newies led by the popular Stunt Car Racer.

Budget buyers are still showing good taste and buying up enough Wizballs to keep it as El Supremo. But Elite's Encore label has two fresh new faces in with Paperboy and G 'N G. . Budgets these days are great value.

Z.M.S.

(C64) GAME TITLE	COMPANY	LAST MONTH	RATING	PRICE
1. Batman - The Movie	Ocean	(1)	70%	£9.99
2. Powerdrift	Activision	(6)	87%	£9.99
3. Ghostbusters II	Activision	(–)	52%	£9.99
4. Continental Circus	Virgin	(2)	50%	£9.99
5. The Untouchables	Ocean	(–)	74%	£9.99
6. Stunt Car Racer	Microstyle	(–)	80%	£9.99
7. Shinobi	Virgin	(4)	76%	£9.99
8. Hard Drivin'	Domark	(–)	70%	£9.99
9. Indiana Jones	U.S. Gold	(5)	69%	£9.99
10. New Zealand Story	Ocean	(3)	88%	£9.99

(AMIGA) GAME TITLE				
1. Xenon II	Imageworks	(1)	90%	£19.95
2. Batman - The Movie	Ocean	(3)	78%	£24.99
3. Stunt Car Racer	Microstyle	(–)	90%	£24.99
4. Continental Circus	Virgin	(–)	70%	£19.95
5. Hard Drivin'	Domark	(–)	80%	£19.95

(BUDGET) GAME TITLE				
1. Wizball	Hit Squad	(1)		£2.99
2. Paperboy	Encore	(–)		£2.99
3. Ghosts & Goblins	Encore	(–)		£2.99
4. Rally Cross Sim.	Codemasters	(4)		£2.99
5. Short Circuit	Hit Squad	(–)		£2.99

Adventure

BY ANDY MOSS

With the New Year upon us at last, our thoughts turn to some of the adventure highlights of 1989 and a feeling that the much loved text only adventure is now regretfully a thing of the past.

COMMENT

I welcome you to another chapter in the CCI Adventure Chronicles, with an apology. Last month's column should have had a review of SWORDS OF TWILIGHT, but due to severe space shortages (one less page for me) it had to be held over, so check it out this month. Talking about this month, I've got SPACE QUEST III for you, which is absolutely BRILLIANT! I cannot remember the last time I got so excited about a game, it really has got me hooked. KEEF THE THIEF gets a look in, as well as a pre production version of DRAGONS OF FLAME the latest in the Forgotten Realms series.

First though I would like to talk about the lengths software houses go to promoting their latest releases. Over the last few months I have had , as you know, some mysterious letters arriving from Electronic Arts concerning THE HOUND OF SHADOW. Each week in the post has come some sort of missive, either a post card or a brochure of a church or even a membership form for the Library of the British Museum! The envelopes contained no other form of identification except a small square note which said 'The Hound of Shadow is upon you and you bear its mark'. Another example came the other day when I received a letter from a Dr Millard, which was typed on the official headed paper of the Climatic Research Service, Fort William, Florida, and was actually addressed to a Professor Roger Kemble! It dealt with a disturbing report (a top secret leaked government document) about the likelihood of a meteor collision with the Earth, and secondly what steps are being taken to avert global warming. Apparantly the two events are linked in someway, and Dr Millard voices considerable trepidation on the plans for accelerated global cooling. After some major nervousness on my part, I found out the whole thing was from Microprose, promoting their soon to be released blockbuster MIDWINTER! Before Bards Tale III was released, I received an inscribed dagger (which now doubles as a letter opener) and other such sundry items have included books, a flight on Concorde, a part in Blind Date (see Leisure Suit Larry II), t shirts, badges, balloons and masks. It all adds up to the fact that there are some ingenious people in this business, and some will stop at nothing to get their game noticed.

ADVENTURE MAILBAG

Dear Andy
Right then, no beating around the bush, I've finished Wasteland. I didn't take a photo cos I don't have a camera but I have written down all the ending text. (I can vouch for this as it is too long to print! AM) Having finished the game a few weeks before writing in, I bet someone's beaten me to it. But if they havn't I was wondering if you would be offering a prize (hint,hint) as it was not easy. I also saw some screen shots of Interplays Dragon Wars, and they were totally mindblowing

Robert O'Gorman,
Slough

Well done Robert! I did say when I reviewed Wasteland that it would be a long time before anyone finished it, and I am interested to see how many peole have in fact done it. It remains one of my all time favourite RPG's. So, as you did so well, I am going to send you the complete full colour book of Roxanna, The Quest For The Time Bird as a prize.

Dear Andy
Over a year ago you reviewed DEAD END in your column, then in a vastly simpler format. Late last year I came to the conclusion that it is impossible, no matter how good my games, to get them published. Therefore after much preperation (and a business course) I decided to publish my (and possibly other good writers) software myself. I have not however just added nice packaging to Dead

End and re released it. The story has been improved and the graphics been replaced by more rounded characters, and version 1.00 of my bakpak routines has been added. This has all led to the cost of the game rising to £7.95 for 64 cassette. Dark Sky Over paradise in now complete and my third title, the first of a fantasy series called DOOM is well under way.

Thanks for a fine column, simple and informative, when most other mags are dressing their columns up with curious pen names and meaningless drivel. Thanks for also not writing off text based adventures as some mags are doing. There is a market for both types, but I say that no matter how powerful a computer gets. Its graphical content will never better your own imagination, and only by reading text and forming your own picture will you truly get into toal interaction.

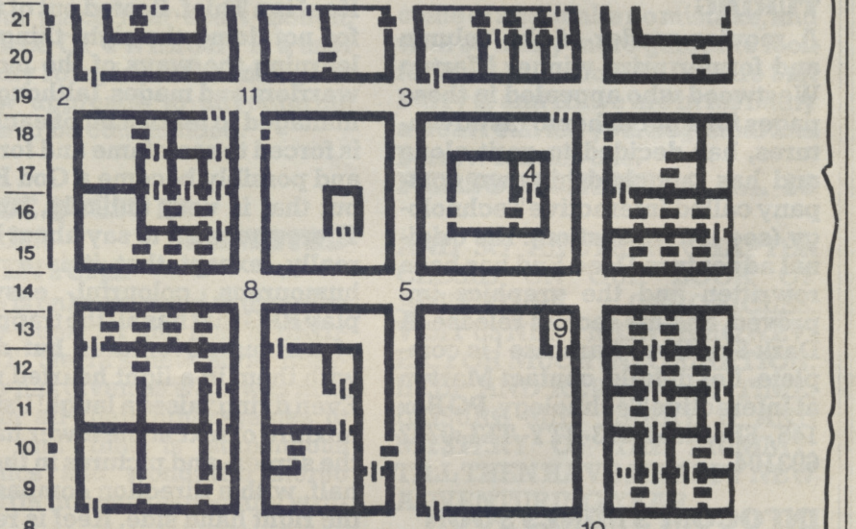
I agree with you that Shogun is a classy piece of work, it certainly is one of my favourites. Lastly, it is a shame about Level 9, the WORM IN PARADISE was the first real adventure I played.

Martyn Westwood,
Sheffield

I wish you every success in your publishing venture Martyn, and do not forget to send me copies of your games, I promise to review them. I have spoken with Pete Austin at Level 9 and he will not relent. He maintains that 16 bit games are the only future for his company, and that totally animated adventuring is the phoenix that has risen out of the text-only ashes. This is strong stuff coming from a company that has supported every 8 bit machine currently available. He stresses that this is not only a commercial decision, he personally has tired of the text puzzle formula, and for some time has yearned for a more exciting approach. Level 9's new system which is described by Pete as a sort of Gauntlet/Sierra/Ultima look with smooth detailed characters that move quickly (using Level 9's data compression techniques) and advanced story lines that WILL provide total interaction. For my part, we all as human beings try to avoid change, because we are creatures of habit, and fortunately for the Human Race there have been people who insist on change, and have made a better world because of it. I will give the new look Level 9 an unbiased test because as principally a text only graduate, I have learnt to look at new things in a positive and not a negative way. If it truly is the way forward, then let us not dwell in the past but look to the future with excitement. Sadly for text only adventures I feel in my bones that they will soon be just a happy memory of computer entertainment development. If I am wrong, I for one will not be disappointed, but you never know.

BARDS TALE II SOLUTION DARGOTHS TOWER LEVEL ONE

The sage told us that the Tower Of Dargoth lies in the City of Philippi. The old man's words were grim indeed, and we approached the Tower warily. Once inside we came upon many teleport traps, which made mapping really difficult. 1) Here there was a bodiless voice which said 'SEEK THE ZEN MASTER' 2) we teleported to 3) which led to a small room 4) where a magic mouth said 'WHAT TRULY COUNTS IS RARELY SAID' and then ASK THE WIZE OF THE MAZE OF DREAD' I though this must be a clue for the Sage. We teleported through 6,7,and 8 to a small room 9) where in the midst of traps and darkness another mouth said 'ANSWER THIS ,IS IT BETTER TO BURN OUT OR FADE AWAY?'. Andreas remembered a part of a clue how he was 'told to burn'.... so we shouted 'burn' and that was correct! 10) teleported us through wraparound magic (11) and in 12) we saw a message which said 'FREQUENCY IS THE ULTIMATE KEY'. at 13) a final teleport brought us to stairs leading up to the next level of the tower... TO BE CONTINUED.



DARGOTH'S TOWER, LEVEL ONE

continued on page 48

continued from page 47

ADVENTURE NEWSDESK

MASTERTRONIC GET ADVENTUROUS

Remember Mike Singleton? Well, the maestro who gave us War in Middle Earth and Lords Of Midnight has surfaced again with a gothic 'Cluedo-like' whodunnit called Grimblood. Deep within Castle Grimblood lurks a murderer who is preying on its inhabitants. It features digitised sound and graphics and promises a different game with each load.

Also from Mastertronic is CONFLICT, a simulation based in the Middle East. As Israeli Prime Minister in 1997, you must force the collapse of all four neighbouring countries via military action, political destablisation or by general pressure. Your only problem is to keep Israel alive for long enough to complete your aim. Both games are only £4.99 on 16 bit!

A NEW NAME IN ADVENTURING

A regular reader of the column and former prize winner Martyn Westwood who appealed in these pages for a publisher to his adventures, has decided to go it alone and has launched his own company called Interactive Technology (see letters section). His original adventure Dead End has been rewritten and the graphics improved, and his second release 'A Dark Sky Over Paradise ' is complete. For details, contact Martyn at Interactive Technology, PO Box 146, Sheffield S13 7TY TEL:0742 693104

INFOCOM'S MINES SOON

Mines Of Titan, Infocoms new RPG is very close to completion, but lips are sealed as to when it will see the light of day.

DRAKKHEN OUT

Infogrammes new adventure Drakkhen is imminent, and word has it that Gary (Dand D) Gygax has been involved in the writing and planning. Review next month.

THE MYTH ABOUT MYTH

Official Secrets have asked me to make it clear that their Mag Scrolls mini adventure MYTH (available to members only) has absolutely nothing to do with System 3's game of the same name, which also has a sub title of History In The Making.

MY TOP 10 1989 ADVENTURES

1) *Journey (Infocom)/ Wasteland (Interplay) Joint winners.*
3) *Shogun (Infocom)*
4) *Ultima V (Origin)*
5) *Ultima IV (Origin)*
6) *Legend Of The Sword (E.A)*
7) *Fish (Mag Scrolls)*
8) *Zork Zero (Infocom)*
9) *Swords Of Twilight (E.A)*
10) *Deja Vu II (Mindscape)*

How about yours?

ADVENTURE REVIEWS

KEEF THE THIEF
EA AMIGA/RPG

Keef is a Thief. Booted out of town for not doing the right thing and learning the ways of the monks, warriors and mages, (although he managed to learn a bit of each) he is forced to seek fame and fortune and possibly become a God King, but that is very unlikely, isnt it? Theres not a lot to say about Keef really, except that it is a very humourous, colourful, easy to play RPG that has all the trappings of serious adventures but deals with them in a light hearted way. Even dying raises a laugh! Using a mixture of text in the lower half of the screen, and pictures in the top half, with a direction compass on the right hand side, Keef is really the perfect adventure for anyone who wants to get into role playing, and may provide some hearty fun for the experienced player.

PERSONAL RATING 7

DRAGONS OF FLAME
SSI 64 DISK/AD&D

This latest game in the Forgotten Realms series has all the hallmarks of the best yet. I was kindly sent a preproduction copy by US Gold, and was assured that it was a final version. The story is set some three hundred years forward from the last Dragonlance offering, and the Companions Of The Lance are still trying to save Krynn from domination by Takhis the Queen of Darkness. Their only hope lies in the revival of the worship of the Old Gods. The Disks of Mishail have been recovered and the first True Cleric in over three hundred years walks Krynn. Whilst the Companions (thats you) were away retrieving the Discs, the Draconian forces have occupied most of the land. Only the Elves of Qualinesti have held out, and whilst the enemy has consolidated for a massive attack on them, the Companions must enter the hidden caves of Sia mori, find the ancient sword Wyrmslayer, sneak into the fortress of Pax and rescue the Princess and free the Elven women and children.

There are really two modes to the game, the Wilderness mode which looks a lot like the game Faery Tale with your party depicted as a single icon in the centre of the screen, and then in close combat mode the view changes to a side on scrolling affair.

You actually start the game with eight party members, and can change control to any of them throughout. This really means you get eight lives before defeat stares you in the face, and looking at the amount of monsters there are to contend with, you will be glad of the help. Talking of help there are a number of NPC's that you will meet on your travels who may accompany you, the only trouble is you do not know on first sight who is good and who is bad. It might be a good idea to chance receiving a first blow to find out, as some NCP's are very handy indeed, especially Gilthinas who wears chainmail and is armed with a +1 longsword and bow.

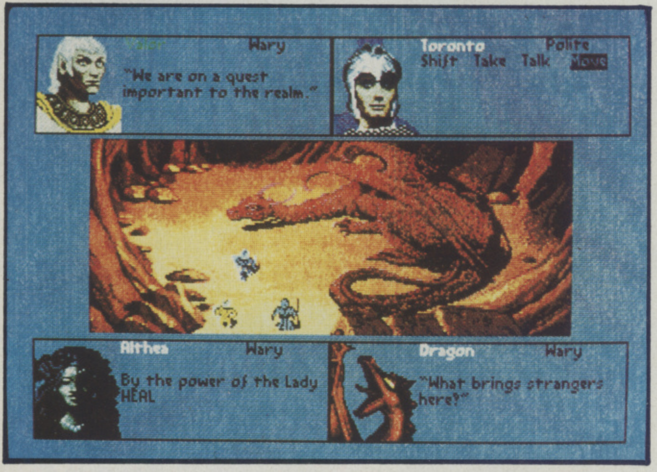
Dragons of Flame is a lively game, that plays very well and cannot really be faulted. I must say that the Forgotten Realms series is turning out some promising stuff.

PERSONAL RATING 9

SWORDS OF TWILIGHT

SWORDS has been written for up to three players to participate in at the same time, and is the first RPG to do so with any real purpose behind it.

The game owes some of its look



Valor Wary

"We are on a quest important to the realm."

Toronto Polite

Althea Wary

By the power of the Lady HEAL

Dragon Wary

"What brings strangers here?"

SWORDS OF TWILIGHT

to Gauntlet/Ultima in the overhead room to room exploration of buildings, whilst outside, the familiar scrolling landscape technique of current RPG's is used. The actual game screen is divided into five windows, and one of the first three windows shows the face, name and current mood of the character that you are playing. The other two depict your comrades in arms, which in my case were computer controlled as I was playing it solo. The middle window is the main action area, and all movement is shown here, and the fourth window is reserved for anyone you meet along the way.

The style of the adventure is such that all text such as dialogue, inventory, and actions are shown alongside the character graphic inside the relevant window. Now, this is where the new style techniques are used, as each character, although led by you and your actions, is an independent person who will move talk and fight without your help, and converse with other people before you manage to get a word in! In short, they are as fustrating as real people. The authors call them stubborn, easily distracted and say that they will constantly get in the way, and that you must put up with their quirks as they will defend you with their lives. In other words, the programming time had run out!

Your quest is somewhat shrouded in mystery, but ultimately you need to find Baleblade, the Sword of Aggression, in order to free the land from the Shadowlord. Along the way you will find useful items, or be given magical equipment, providing that you learn how to converse properly. This is one part of the game I found tedious. By pressing the fire button, a series of menus appears giving you a number of choices, and you highlight the appropriate action that you require. This all very well in theory, but when a character asks you a question and you have to shunt through three different menus before finally finding the correct response, you find that it took so long that another character has answered in your place! That apart though, SWORDS OF TWILIGHT is a user friendly role player that brings us a new approach to adventuring that is to be commended.

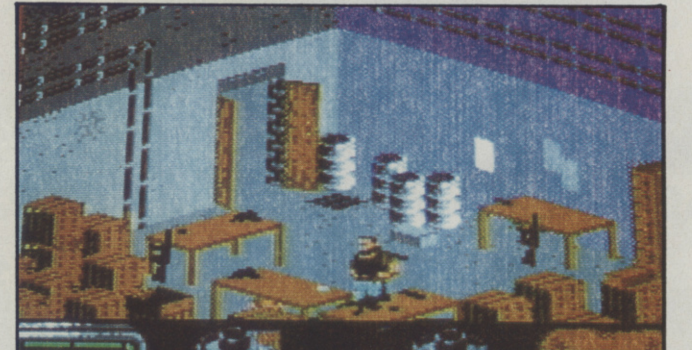
SPACE QUEST III SIERRA ANIMATED ADVENTURE

There is only one word to describe Space Quest III and that is BRILLIANT. Sierra's new style interpreter has given us what was missing in all their other games to date, and that is stupendous graphics and wonderful stereo sound (in this case especially written by Bob Siebenberg from the legendary band Supertramp). Right from the start, you are in what turns out to be a very nasty puzzle indeed.... how to get out of the space junkyard where you find yourself deposited after your heroics in SQII.

You obviously need to find a ship that works, (nothing that a little mechanical tinkering will not solve) and just how do you bust out when you've got your ship working! Once again you as Roger Wilco must overcome all odds, this time to rescue two computer programmers from having to code awful space games with Scumsoft . They were abducted by Space pirates, and taken to the odious Company Boss Elmo Pug where they have been forced to work. Can Roger save the day? All the action is as usual on screen and animated in the most sensational way, with some simply stunning scenes. There are three planets to explore before you finally come face to face with Scumsoft, Elmo and who knows what? Sierra have come of age, make no mistake, and with so many more games to look forward to, including Leisure Suit Larry II and III we are in for many a treat I can tell you. Beg, steal and borrow for this one.

PERSONAL RATING 10

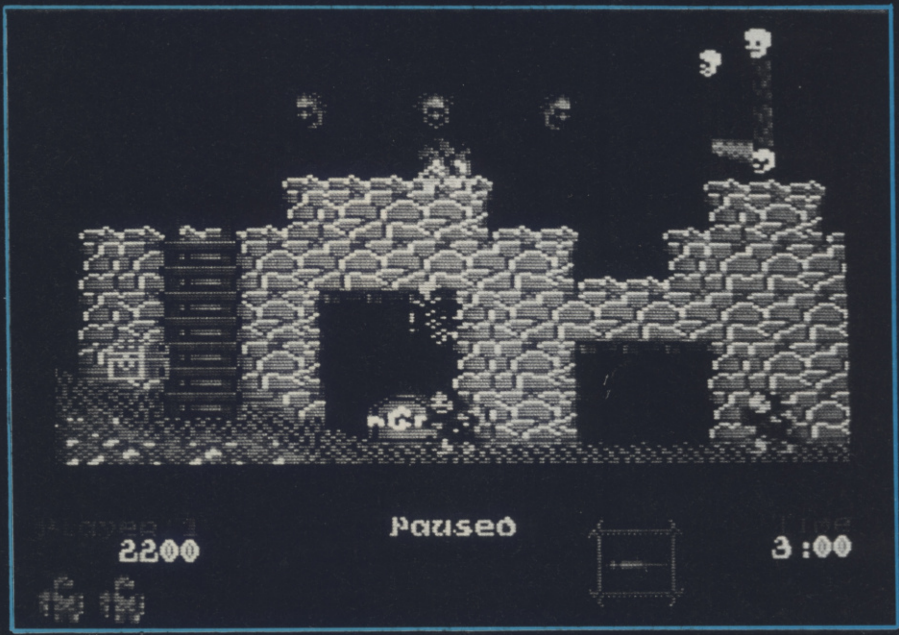
AND SO ANOTHER CHAPTER CLOSES ON OUR BOOK OF ADVENTURE CHRONICLES. VISIT US NEXT MONTH HOWEVER, FOR MUCH INFORMATION, HELP AND REVIEWS OF TIME, LEISURE SUIT LARRY II AND MYSTERY OF THE MUMMY. TILL THEN HAVE A HAPPY NEW ADVENTURING YEAR.



SPACE QUEST III

Ghouls 'n' Ghosts

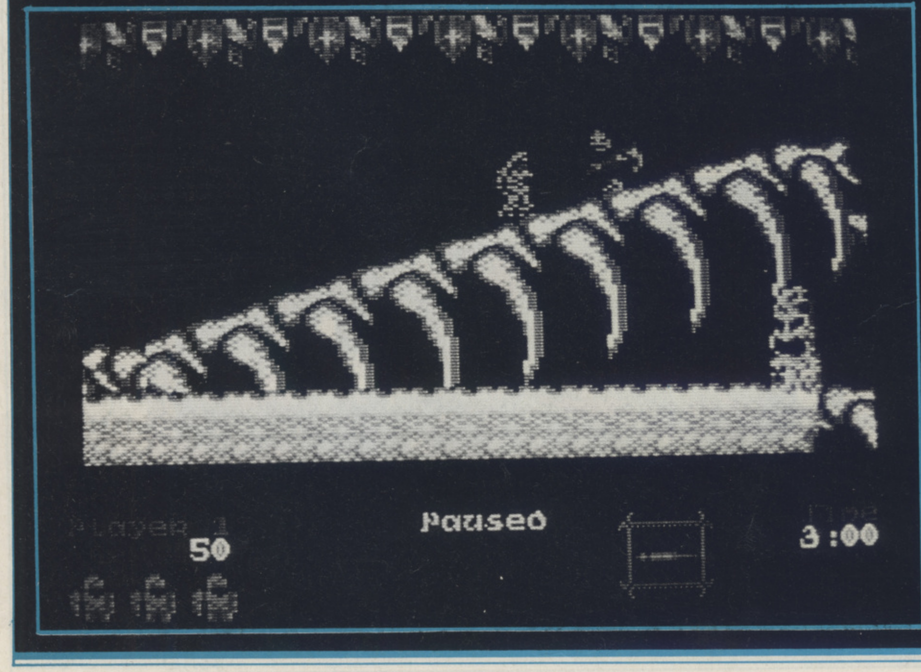
US Gold



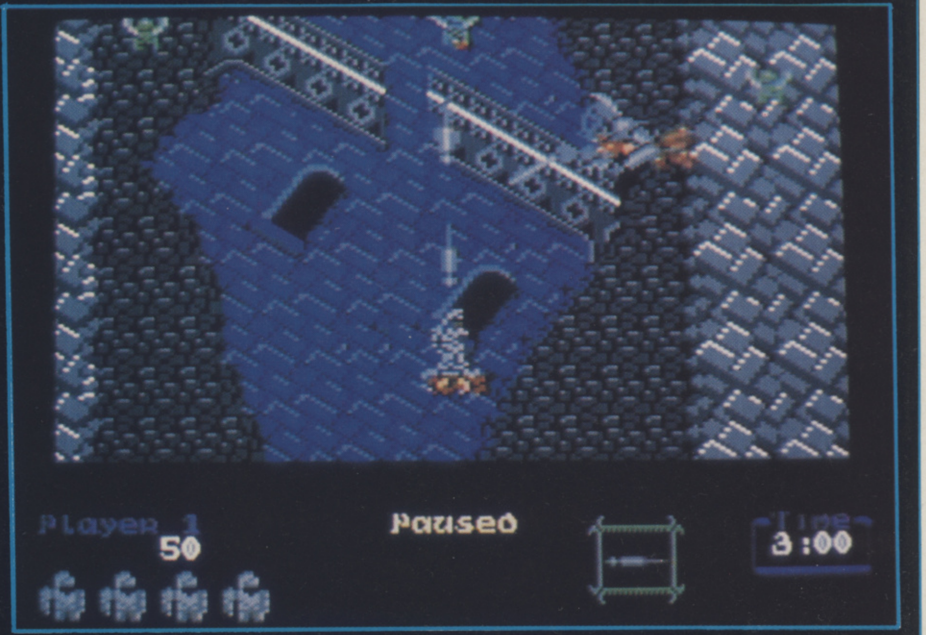
When it was confirmed that Capcom's Ghouls 'n' Ghosts was to be converted to home formats by US Gold, the obvious choice of programmer for the 64 version was Chris Butler, the man behind the superb 64 Ghosts 'n' Goblins. However, it turned out that Software Creations got the contract, and Chris went on to program Power Drift for Activision. It's interesting to see how a software house's loyalties change.

> *"Strip away all the luxurious extras today's technology allows, and you've still got a brilliant game."*

Obviously Mr Butler isn't the only man capable of producing a decent conversion of the sequel to Ghosts 'n' Goblins, as in fact, the coin-op presents far fewer problems to the 64 programmers than most popular arcade machines. Like the original, it's a scrolling platform game. A classic format, it is brought right up to date with some extremely powerful hardware. Parallax scrolling across a huge monitor, combined with buckets of colour and some clever use of sprites, amounts to about the best ever non-3D coin-op in my opinion. Strip away all the luxurious extras today's technology allows, and you've still got a brilliant game. Good news then for the conversion to the 64.



Once again you play Arthur the knight, and your goal is just as before: to rescue your princess from the spooks of hell. Reaping grimly with their rusty scythes, the hooded undead rise from the depths of the first level. A stab from one of your magic lances will see them off, although if you flee them, they'll soon get bored and return to the grave. The vultures are a bit tougher, taking a couple of hits before exploding. A short



sharp storm follows half way though the level, proceeded by a couple of vicious pigs and few skull-spitting fires. In contrast to the rest of the level, the giant goblin guarding the exit is rather impressive.

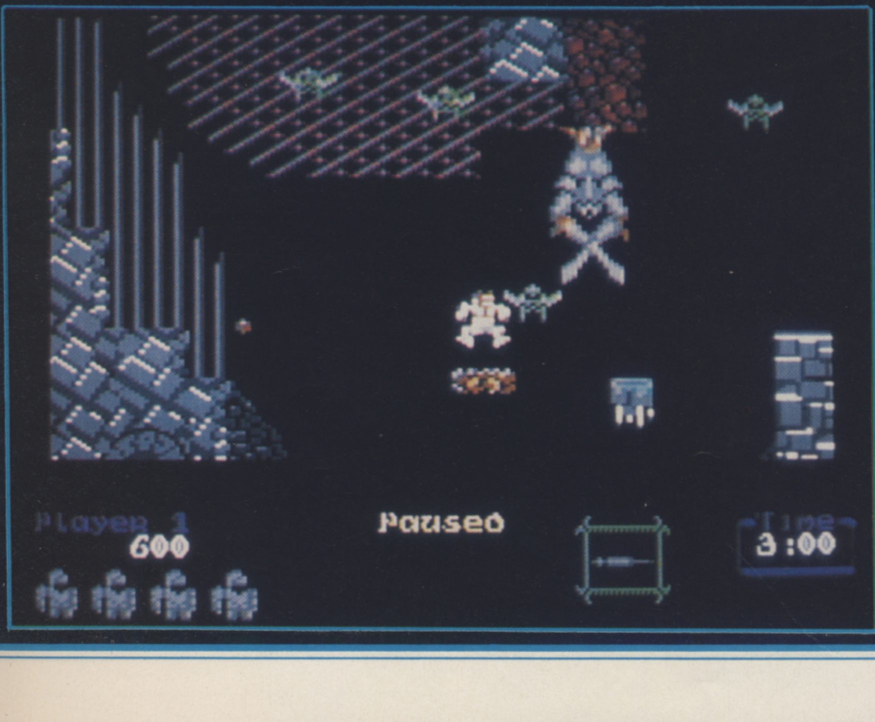
Each of the following four levels has a very different look, with new enemies, scenery and obstacles. A small part of level two for example, involves crossing heaps of loose grain, by means of a series of rickety rope bridges. Level four has you leaping around on a magical platform, switching entirely to vertical scrolling. The levels are also each accompanied by a new piece of music, all of which are extremely atmospheric, with a surprising amount of original sounds.

> *"The levels are also each accompanied by a new piece of music, all of which are extremely atmospheric, with a surprising amount of original sounds"*

Graphically, the game is on par with Software Creations' Bionic Commando conversion. Unlike the coin-op, there's a lack of sparkle in the sprites due to the murky colour schemes. Definition could have been sharper, and the backgrounds are a little messy in places. Because the background graphics have been cut down to the minimum required by the gameplay, some levels can look rather empty, which is off-putting for first-timers, although as is usually the case with coin-op conversions, if you've played the original you'll subconsciously fill in the blanks yourself.

Unfortunately a few bugs seem to have remained in the production copies. The bouncing heads of level two move erratically, there are glitches in the storm of the first level, and you'll sometimes find yourself falling through non-existent holes. It's a shame these bugs weren't riddled out, as they lower the tone of an otherwise attractive and playable game. Ghouls 64 will please fans of the coin-op, but I can't help feeling it's a bit of a missed opportunity.

Graphics: 63%
Sound: 82%
Playability: 74%
Overall: 74%
Price: £9.99 (cass)
£14.99 (disk)



Amiga

More care seems to have been taken with the Amiga version. It's bug-free (although the collision detection is sometimes inaccurate) and as you'd expect, it looks a lot more like the coin-op. The full height of the screen is used, and everything looks and feels neater. The music is even better thanks to the addition of clear samples, especially the dramatic soundtrack of the first level. Gameplay is improved by more responsive controls, and it all adds up to a very satisfying conversion.

T.H.

Graphics: 82%
Sound: 80%
Playability: 89%
Overall: 87%
Price: £19.99

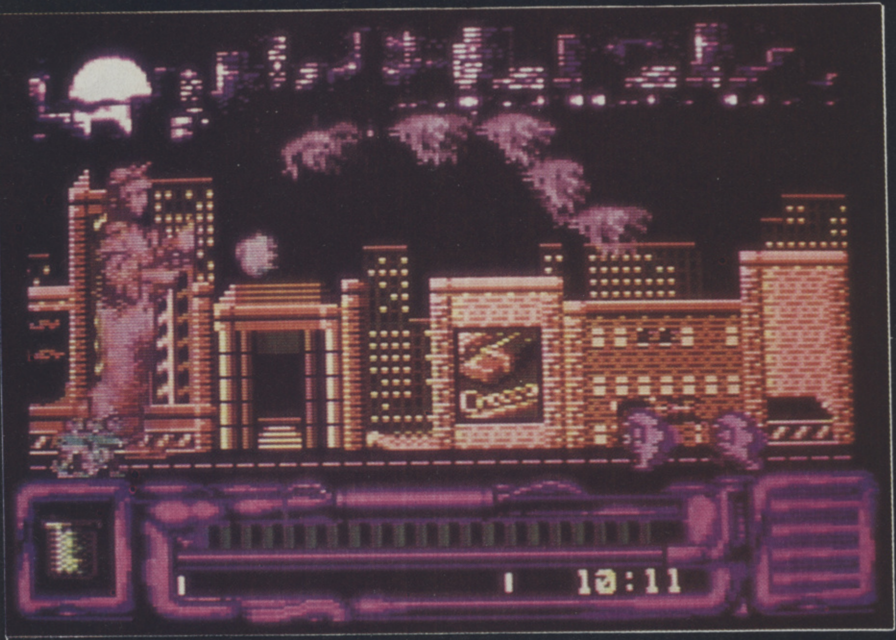
Ghostbu

Activision

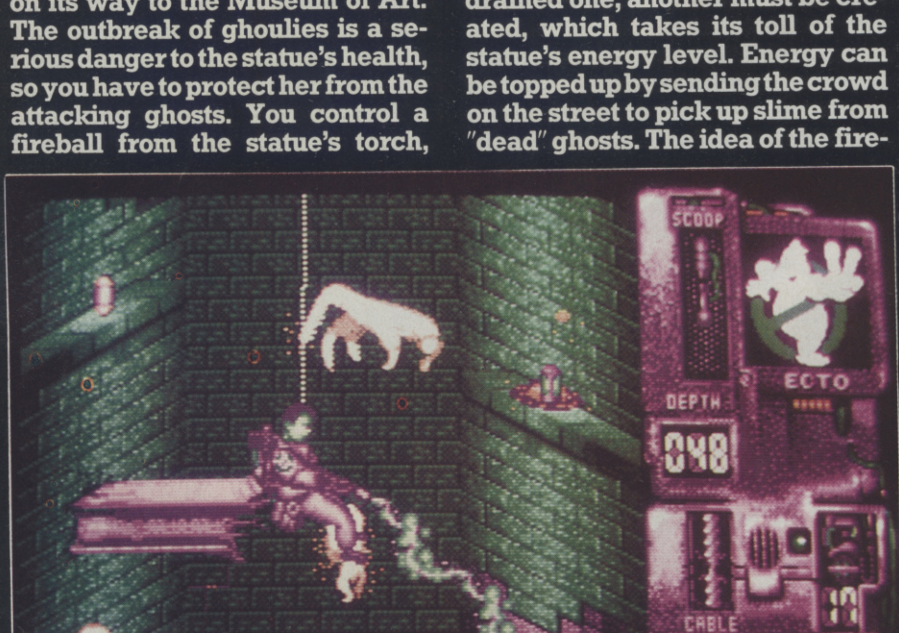
If Ghostbusters had udders, they'd be red raw. You would have thought the poor old bovine would have been milked dry with The first Ghostbusters game which sold over 250,00 The Real Ghostbusters cartoons and the chain of affiliated merchandise, but no, Ray Parker Jnr sings on, the busters keep busting, and Activision come out with their third computer tie-in.

Following the recent trend of film tie-ins, GBII takes three scenes from the film, works them into sub games, and arranges them one after the other. Before you get into the first of these, you get a short intro outlining the plot, accompanied by digitised stills from the movie. The 64 can do some great things, but digitising graphics is not one of them. Those in the intro are nothing but a mess of coloured pixels, which add nothing to the game, but prolong the loading time.

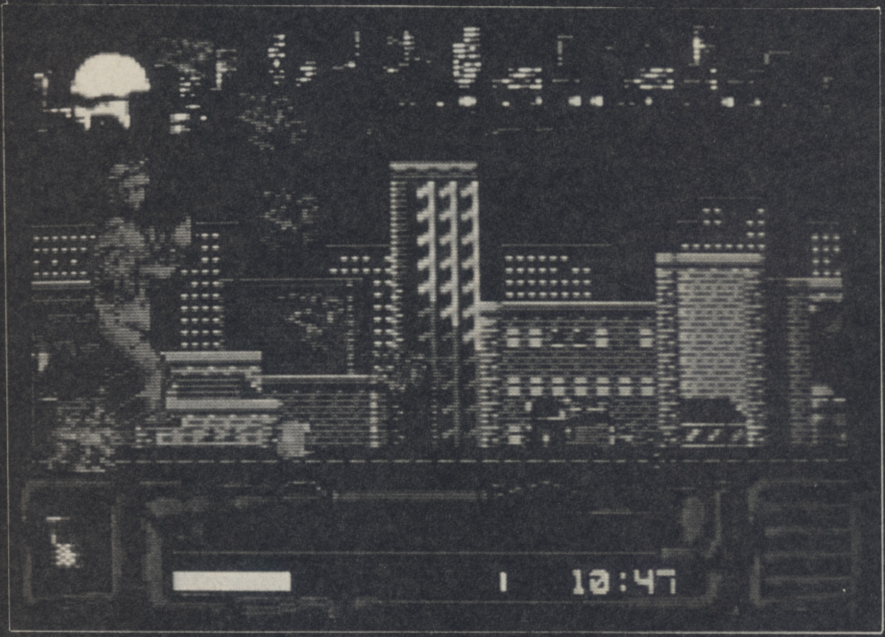
Things pick up once the first level is loaded. At the bottom of a deep shaft, beneath the city streets, runs a river of slime. Your goal is to retrieve a sample for analysis. Your fellow ghostbusters lower you on a winch, while an assortment of spooks reach out from the walls, spit slime and generally give you a hard time. There are three parts of a scoop needed to collect the slime, all of which can be found in the shaft. Swinging from side to side, you have to align your feet with each scoop component to pick it up. Energy and weapon refills can also be collected along the way. The main sprite is large and well drawn, and for a change, the gameplay is fairly original, although only mildly enjoyable.



Level two also shows an effort on the designers' part to come up with something a bit different. The Statue of Liberty has come to life, and is stomping down Broadway on its way to the Museum of Art. The outbreak of ghoulies is a serious danger to the statue's health, so you have to protect her from the attacking ghosts. You control a fireball from the statue's torch, which itself can shoot smaller fireballs at the enemy. Each fireball is limited in power, and once you've drained one, another must be created, which takes its toll of the statue's energy level. Energy can be topped up by sending the crowd on the street to pick up slime from "dead" ghosts. The idea of the fire-



usters II

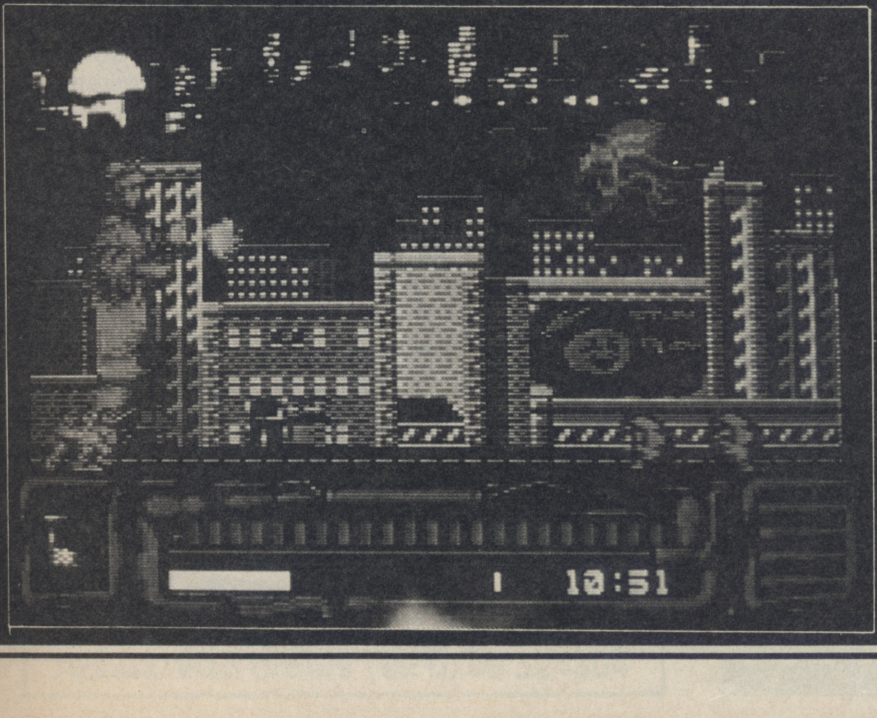


balls running out proves irritating. Your control of the ball is much like that of a spaceship in a conventional shoot 'em up, but when you shoot your last ball of flame, you're immediately transported back to the torch, breaking any rhythm you had going. Technically, this second stage is impressive, with a lot of neatly defined sprites, a big, animated statue of liberty, and a bit of parallax scrolling thrown in for no extra charge. It's a lot harder than the first section, but again is hardly gripping.

The third and final sub game sets you the twin goals of rescueing Oscar the baby, and destroying the evil Vigo the Carpathian. I've said it about the Ocean movie tie-ins, and it's true of GBII, that rather than amounting to one large, flowing game, the sections may as well be three different games, none of which is particularly addictive. An interest in the film will follow through to the game, but I can't see many playing it into the witching hour.

T.H.

Graphics: 79%
Sound: 67%
Playability: 51%
Overall: 52%
Price: £9.95 (cass)
£14.95 (disk)



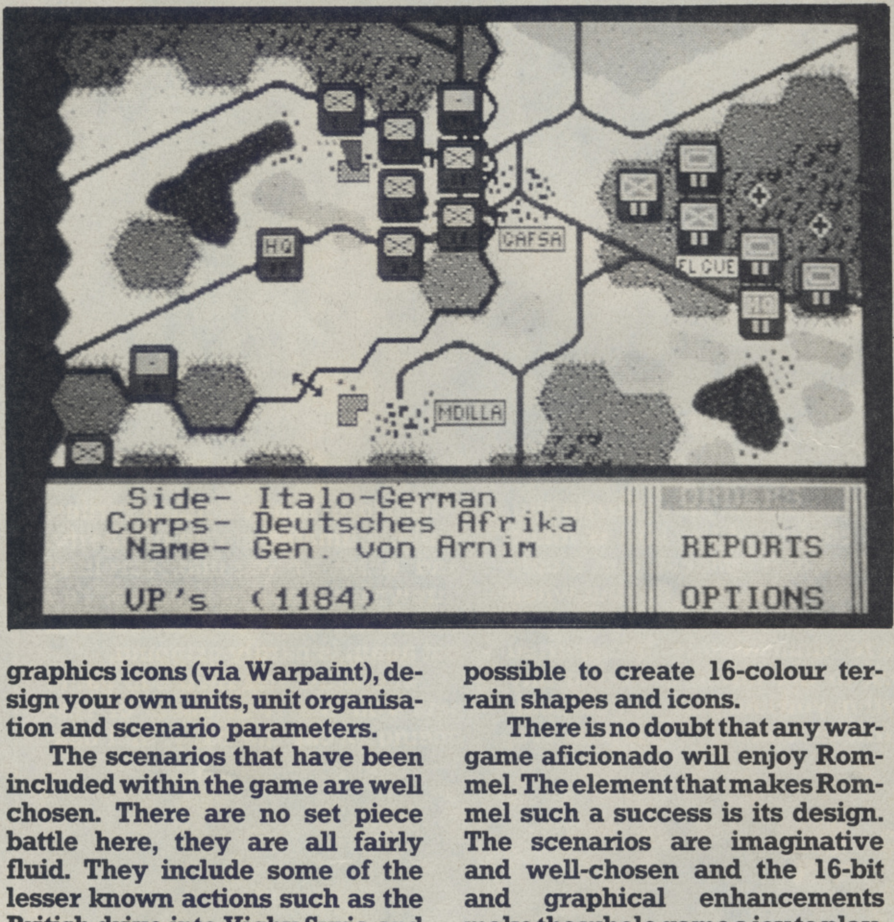
AMIGA

Although the Amiga version has some attractive graphics, it looks very similar to the 64 game. Gameplay is identical throughout almost the entire game. Its only deviation is its more cramped, and subsequently frustrating first level. The sampled Ghostbusters theme is clear enough, but by now, isn't everyone sick to death of the original tune? A mix of the Bobby Brown tie-in single would have gone down well. As the only differences between the 8 and 16-bit versions are minor sound and graphical improvements, with a slight reduction in playablitity, the Amiga game comes out a little worse for its higher price.

Graphics: 78%
Sound: 69%
Playability: 45%
Overall: 45%
Price: £24.95

ROMMEL - BATTLES FOR NORTH AFRICA

SSG



Side- Italo-German
Corps- Deutsches Afrika
Name- Gen. von Arnim
UP's (1184)

Initially appearing on the C64, SSG's Rommel has finally been converted to the PC. Rather than complete a straight port to the 16-bit environment SSG have added a variety of features. The actual package arrives with three disks. An excellent 72-page manual is also included giving game instructions, a guide to your first battle, a description to the eight included scenarios and instructions on how to use the scenario designer which SSG call "Warplan", and there are other goodies.

Rommel has been designed within SSG's familiar Battlefront system. This system simulates the operational level combat between opposing sides up to one Corps in size. Manoeuvre elements are battalions, while the smallest element the player can interact with are parent regiments. The time scale uses four turns per day which are split up into three daylight turns and one night turn.

As commander you can order the allocation of divisional assets among the regiments, artillery and air support, movement orders for the divisional headquarters and orders for individual regiments. Orders include movement towards objective hexes or contacted enemy units, four levels of attack, three levels of defense and reserve mode (to re-group).

Playing the game is entirely done via menus. Some formations can be specified as brittle. So monitoring casualty levels is a prime importance. The Warplan utility is given either to create new scenarios or modify existing ones. You can design your own maps, graphics icons (via Warpaint), design your own units, unit organisation and scenario parameters.

The scenarios that have been included within the game are well chosen. There are no set piece battle here, they are all fairly fluid. They include some of the lesser known actions such as the British drive into Vichy Syria and Lebanon during June 1941.

For the benefit of the PC SSG have made a number of changes and additions. Firstly, the menu choices can be made via function keys as well as arrow keys. There are many graphic changes to the PC version including the use of "marching ants" icons to signify the present state of the battalion during battle. The VGA/EGA graphics are utilised to the full giving the whole game a very polished appearance. With over 250 full map icons that can be utilised to build up the map. It is possible to create 16-colour terrain shapes and icons.

There is no doubt that any wargame aficionado will enjoy Rommel. The element that makes Rommel such a success is its design. The scenarios are imaginative and well-chosen and the 16-bit and graphical enhancements make the whole game a joy to play.

Contact: Electronic Arts' on 0753 49442, or call Strategic Plus Software on 01 979 2987, a mail order shop, who also stock this Software .

P.R.

Graphics: 88%
Sound: 50%
Playability: 90%
Overall: 90%
Price: £24.99 (Disk)

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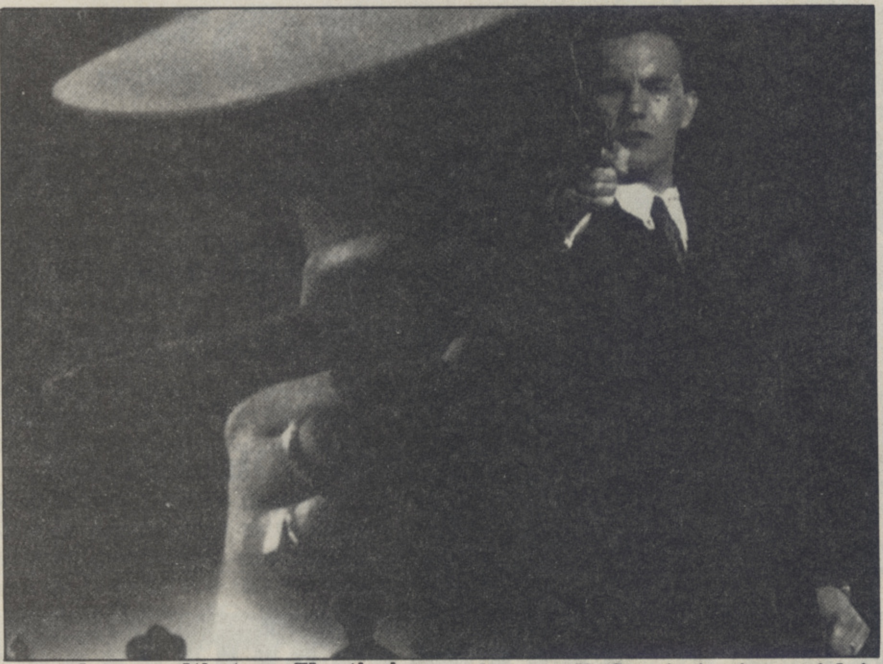
The Unto

Ocean



These multi-stage film tie-ins have become Ocean's speciality, and going on reports of their recent sales figures, it looks as if they've found themselves a winning formula. As you'd expect, The Untouchables continues in the favoured style, with six scenes translated from the film.

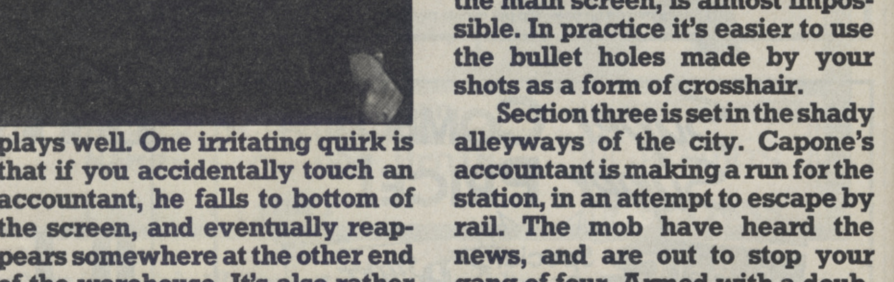
Playing the parts of four of The Untouchables, it's your job to bring Al Capone to justice. His illegal trade in alcohol is no secret, but before you can nail him you need proof, or at least evidence of his crimes. Following a tip-off, you locate a warehouse being used by his men, and decide to pay them a visit.

Although you'd planned just to break up the party and make some arrests, you find that some of the accountants are there with substantial incriminating evidence. Chaos ensues, as you fight off the endless army of gangsters, whilst tracking the accountants. Shooting the accountants forces them to give up their documents.

On the whole this first section plays well. One irritating quirk is that if you accidentally touch an accountant, he falls to bottom of the screen, and eventually reappears somewhere at the other end of the warehouse. It's also rather drawn out, and would benefit from moving on to the second stage a little sooner.

From the information you picked up at the warehouse, you discover the location of a liquor run on the US/Canadian border. Intercepting the convoy on a bridge, you decide to give your trigger finger a little light excercise. Control can be switched between any of the foursome, so in effect you have four lives. Your current gunman is seen at the bottom of the screen, rolling left and right as he dodges the machine gun fire. A small circle at the top of the screen acts as your sight. The idea is that you use this to line up your shots, but as it's so small, and moves in fairly large steps, relating the flashing colours seen through the sight, to the action in the main screen, is almost impossible. In practice it's easier to use the bullet holes made by your shots as a form of crosshair.

Section three is set in the shady alleyways of the city. Capone's accountant is making a run for the station, in an attempt to escape by rail. The mob have heard the news, and are out to stop your gang of four. Armed with a double-barrelled shotgun, you have to clear each alley of mobsters be-



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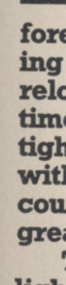
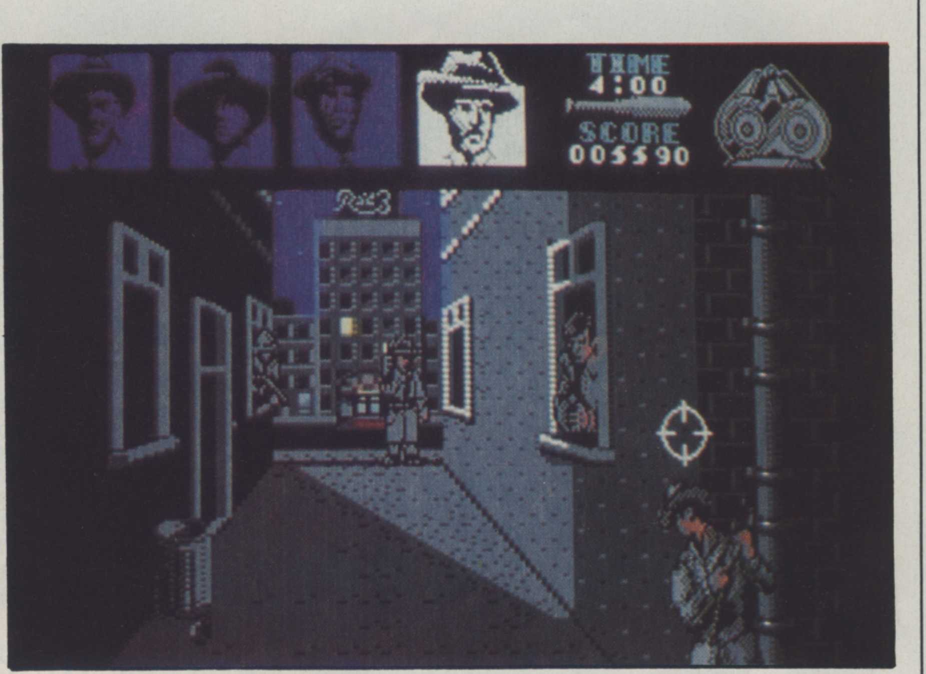


uchables

Chicago in the 1920's was no place for Dixon of Dock Green. Al Capone had set up a massive liquor racket, which of course during the total prohibition of alchohol in the USA was illegal. Organised crime mainly based on bootleg booze was getting out of hand, so to fight the mob, hard nut cop Elliot Ness set up his own counter-force made up of his best men. Through their unbending determination to bring down Capone, they gained the title of The Untouchables. Though Capone eventually died in prison, he was only there for income tax evasion!

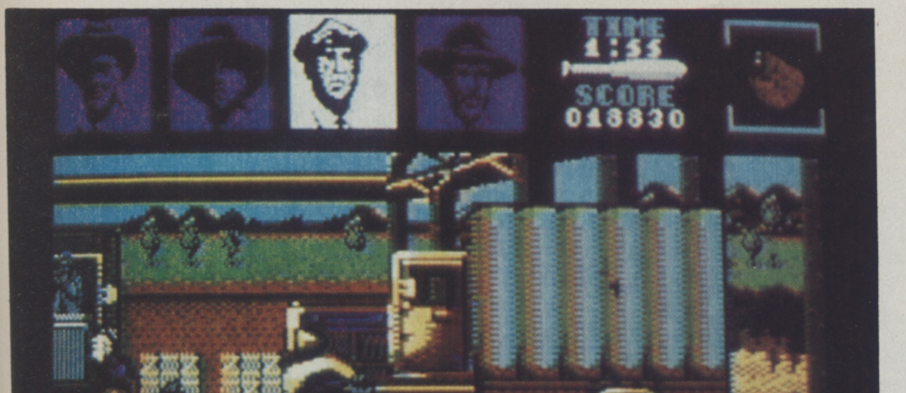


fore moving on to the next. Ducking into a sideroad allows you to reload in safety, but there's no time to hang around. If time is tight, you could always reload within range of the enemy, but of course the risk to your health is far greater.

The fourth stage is a little more light-hearted. At the station, The Untouchables meet up with the accountant and his armed escort. Yet another shoot out follows, but in the confusion, a mother and here baby are separated. The runaway pram sets off down a large flight of stairs, and it's up to you to both guide the baby to safety and deal with the baddies. With that done, in the fifth scene you are given five seconds to shoot the accountant, making sure you don't hit his hostage. The climax comes with a rooftop chase, presented in a similar fashion to the alleyway shoot out.

It's obvious from the variety of design and quality programming, that a lot of time has gone into The Untouchables. It's extremely neatly presented, with a movie-style front end which includes a tense opening score. The sprites are of a high standard, as are most of the backgrounds. Although there are six varied levels, most are very repetitive. The alley scene for example, has you popping out from the sideroad, shooting a couple of villains, and then repeating the action over and over again. The programmers have done a fine job in realising the storyboard, but I can't say I find any of the sections particularly engrossing. Some satisfyingly large explosions and gory death sequences would have made for a meatier feel, but even so, I'm sure The Untouchables will be a favourite among fans of Platoon and Batman.

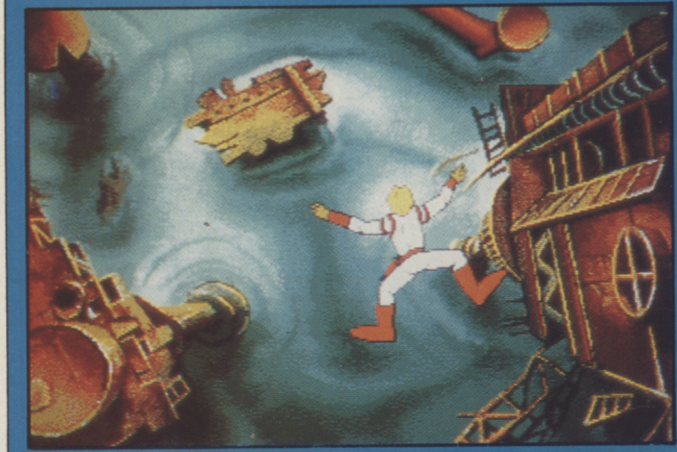
T.H.

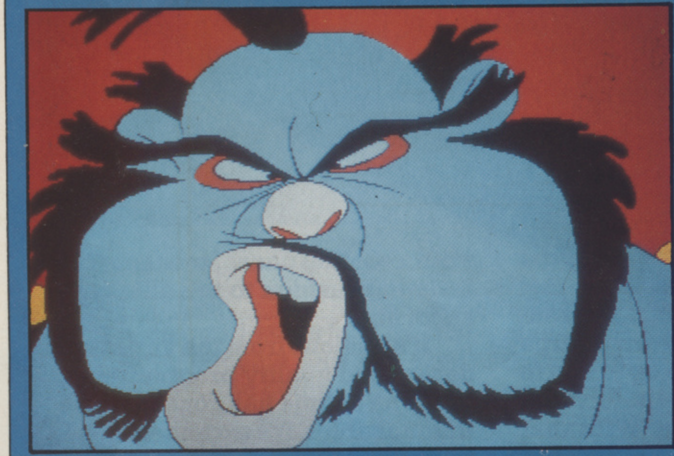


Graphics: 88%
Sound: 67%
Playability: 71%
Overall: 74%
Price: £9.95 (cass)
£14.95 (disk)

SPACE ACE

PREVIEW





Space Ace is the follow-up to Dragon's Lair, and goes one better by running on the standard 512K Amiga – as well as having over three times as many screens.

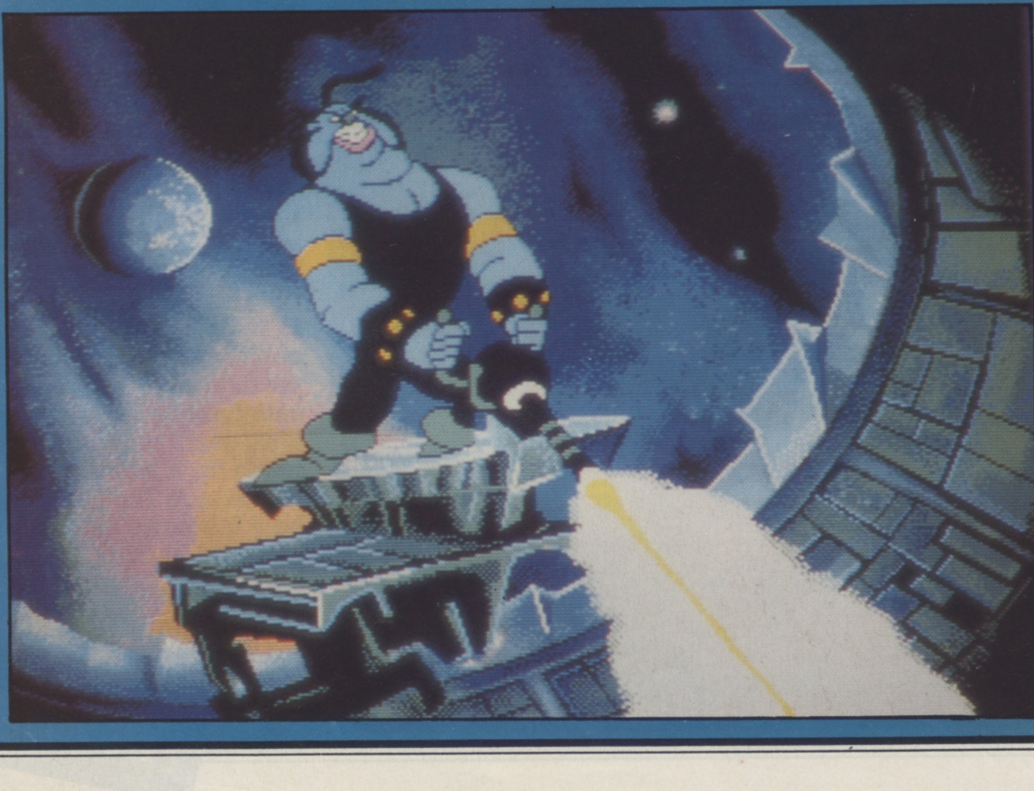
Ace – our hero, has landed himself with a few problems. The evil commander Borf is planning to take over the planet Earth with his dreaded Infanto ray gun, and to add to Ace's problems, his beautiful girlfriend Kimberley is in the grips of Borf!

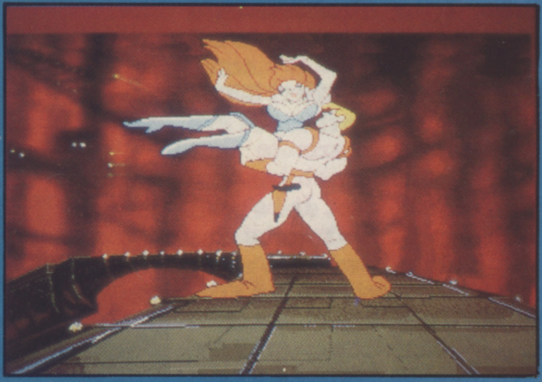
Ace has to travel through FORTY screens, each one totally individual, to rescue his girl and save the world. Digitised sound from the original laserdisk coin-op adds to the atnosphere, and the graphics are without a doubt the best ever to grace our Amiga screens.

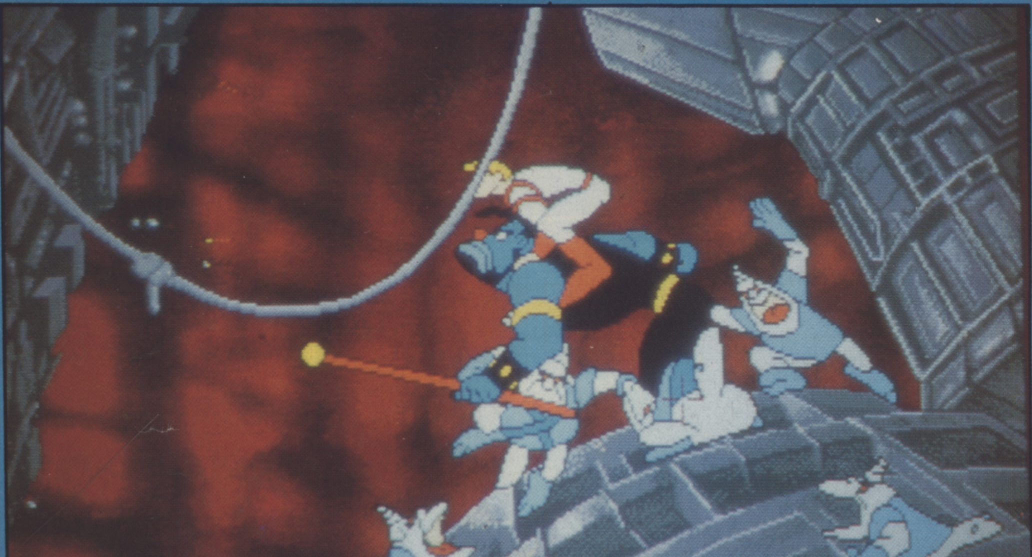
Though we have seen the game in its entirety, the pre-production copy did not let us sample the gameplay itself, so it is impossible to comment on whether or not it will offer more player interaction than Dragon's Lair.

Space Ace is bound to cause a stir when it is released within the next few weeks. The release of Dragon's Lair saw people rushing out to buy 1 Meg expansions and even complete Amigas, just to look at the stunning graphics! At least you don't have to upgrade to be a Space Ace! A full review will appear in the next *CCI*

S.P.







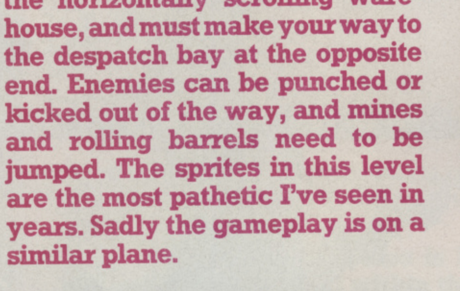
Beverly Hills Cop

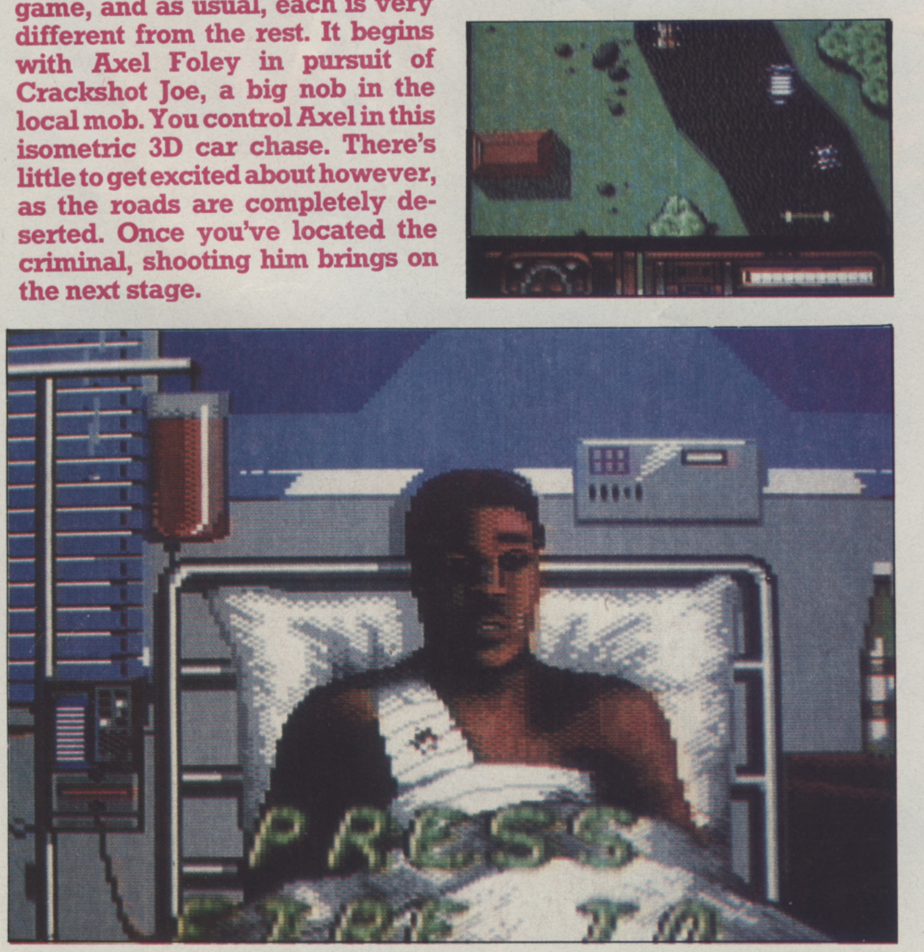
Tynesoft

Buying up the rights to popular coin-ops and celebraties has been common practice in the computer game business for years, but only recently has the potential of a big name movie licence been realised. Beverly Hills Cop the movie, released at what has so far been the peak of Eddie Murphy's acting career, would have almost guaranteed a high chart position for the game, had the game been released at the same time as the film. It might have missed the boat from a marketing point of view, but that's no reason why the game itself shouldn't be a corker.

There are five parts to the game, and as usual, each is very different from the rest. It begins with Axel Foley in pursuit of Crackshot Joe, a big nob in the local mob. You control Axel in this isometric 3D car chase. There's little to get excited about however, as the roads are completely deserted. Once you've located the criminal, shooting him brings on the next stage.

Now the location switches to a warehouse, from which members of the gang are shipping out crates of arms. You begin at the far left of the horizontally scrolling warehouse, and must make your way to the despatch bay at the opposite end. Enemies can be punched or kicked out of the way, and mines and rolling barrels need to be jumped. The sprites in this level are the most pathetic I've seen in years. Sadly the gameplay is on a similar plane.





Next comes a weak Spy Hunter clone, as you chase the escaping arms dealers. Shooting the first two explosive-laden vans will put a stop to them, but the third must be tracked to reveal the location of the gang's mansion.

On foot once more, the fourth level has you gunning down Mr Big's bodyguards in the grounds of the mansion. This extremely simple stage is a multi-directionally scrolling shoot 'em up, made unnecessarily awkward by the fact that you can't move diagonally.

The final load takes place inside the mansion. Your goal is to find and arrest Mr Big, and rescue the hostages. It looks and plays just like Mayday Squad, viewed through Axel's eyes in 3D. Unfortunately, it's extremely slow moving, with unresponsive controls and bland graphics, which is typical of the entire game. Beverly Hills Cop has a severe lack of excitement from start to finish. Its consistently awful graphics and sound just rub salt into the wound. Tynesoft really do have a cheek releasing such rubbish at full price. Forget it.

T.H.

Graphics: 25%
Sound: 12%
Playability: 20%
Overall: 20%
Price: £9.95 (cass)
£12.95 (disk)

HORGAN'S HINTS

"You can lead a horse to water, but a pencil must be led", as Stan Laurel once said. Completely irrelevant to this month's hints I'll admit, but I thought it was worth sharing with you. (I'm not so sure! Ed) Unfortunately that's about the extent of this month's classic comedy. However, what I can offer you is a steaming heap of the sharpest pokes in existence, with a smooth creamy topping from those Wickersley wonderboys, Barfie and Goody.

64

Shinobi

This gets a bit tricky after the second level, so cassette users may well find it beneficial to enter this listing before loading the game, which will magically become a lot easier.

```
0 PRINT CHR$(147)
1 FOR I=304 TO 343:READ A$
2 L=ASC(LEFT$ (A$,1)): L=L+55:
IF L‹5 THEN L=L+7
3 R=ASC(LEFT$ (A$,1)): R=R-55:
IF R‹5 THEN R=R+7
4 V=(L*16)+R: C=C+V:POKE
I,V:NEXT
5 IF C‹›3050 THEN PRINT "DATA
ERROR!":END
6 PRINT "SAVE LISTING FOR FU-
TURE USE"
7 PRINT:PRINT"SYS 304 TO
START"
10 DATA
20,56,F5,A9,40,8D,29,04,01
11 DATA
8D,2A,04,4C,40,03,A9,AD,8D,75
12 DATA
08,A9,A0,8D,77,08,A9,1C,8D,78
13 DATA
08,4C,0D,08,00,00,00,00,00,00
```

Rally Cross Simulator

Having trouble with this cheap and chearfful Hotrod clone? Reset the game and give these pokes a try.

```
POKE 3822,96 (infinite time)
POKE 4376,44 (infinite fuel)
POKE 4302,44 (immunity to dam-
age)
SYS 2071 (restarts)
```

Rick Dangerous

Here are two cheats for this fave of the production depatment. To restart a game at the last level visited, type FLUFOMATIC on the hiscore chart. Alternatively, reset the game and enter these pokes.

```
POKE 27931,173 (infinite lives)
POKE 11193,173 (infinite bombs)
POKE 10886,173 (infinite shots)
SYS 2071 (restarts)
```

Indiana Jones and the Last Crusade

Hold down the keys F, I, S and M, to enter the cheat mode. Pressing keys from 1 to 5 will take you through the current level, whilst 6 takes you to the next level. If you'd prefer, try out these pokes, to be entered after resetting the game.

```
POKE 32552,173 (infinite lives)
POKE 37255,173 (infinite whips)
POKE 35756,123 (infinite tor-
ches)
SYS 32092 (restarts)
```

Navy Moves

Not much of a stunner, but this poke for the first load may revive your interest. Reset the game before entering:

```
POKE 5851,173 (infinite lives)
SYS 3584 (restarts)
```

The Untouchables

Here are some details of the locations of lives counters and the like. You'll need a cartridge with a monitor to make any use of them, but I'd be interested if anyone can work them into a more accessible form.

Level 1:
$80FE (33022)=energy, maximum $28 (40)
$80F3 (33011)=time in minutes
$80F6 (33014)=evidence
Level 2:
$80FA (33018)=baseball bat length
Time as above
Level 3:
$8093-$8096 (32915-32918)=energy
Time as above

Leonardo

Load and reset the game before entering:

```
POKE 34117,0 (infinite lives)
POKE 34391,252 (infinite time)
POKE 38162,252 (infinite time in
bonus sections)
SYS 19456 (restarts)
```

Blasteroids

Enter these after reseting the game.

```
POKE 11571,173 (infinite ships)
SYS 25856 (restarts)
```

Exolon

Here's one for those without a reset switch, from Andrew Thomas. Enter it before loading the game with infinite lives.

```
0 REM HACKED BY ANDREW THO-
MAS
3 FOR A=49152 TO 49210:READ
B:POKE A,B:C=C+B:NEXT A
5 IF C‹› 6893 THEN PRINT "ERROR-
!":END
8 SYS 49152:POKE 198,1:POKE
631,131
10 DATA 120,169,192,
141,21,3,169,13, 141,20,3,
88,96,169
11 DATA 32,141,240,3,
169,141,241,3, 169,192,141,242
12 DATA 3,162,0,189,44,
192,157,64, 192,232,224,0,208
13 DATA 245,76,49,234,
238,32,208, 169,234,141,3,29
14 DATA 141,4,29,141, 5,29,96
```

Remember, there's a bag of assorted stuff for the best offerings each month, so get your pokes, cheats and maps to me now! Here's the address:

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40 Bowling Green Lane
LONDON
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CRADLE

by ARTHUR C.CLARKE & GENTRY LEE (Futura Publications £6.99)

Arthur C. Clarke never fails to surprise. In 'The Deep Range' he wrote what was, in effect, a plea to 'save the whales'. Whales figure again in 'Cradle' but this time the story is, if you'll forgive the pun, an altogether different kettle of fish. (Whales are not fish! *Ed.*) Now it's 'save the human race' time, combined with a SF adventure thriller liberally spiced with sex.

Carole Dawson, investigative journalist, is on the trail of a disappeared missile which, it is believed, has come down underwater, somewhere near the Florida Keys. Carole suspects there has been a cover-up by the American government which is, as governments are wont to do, intent on keeping from the general public the knowledge that a potentially dangerous experiment has gone wrong.

Carole recruits charter boat owner, Nick Williams and his associate, Troy Jefferson, to help search for the missile. They are successful but, during their dives, in addition to the weapon, they also find a weird and wonderful undersea habitation.

This habitation turns out to be an alien spaceship which has come down to effect repairs caused by their taking on board, while in flight in our stratosphere, an earth satellite which exploded during examination inside their ship.

The mission of the aliens, who are from the planet Canthor and are travelling the universe, is the crux of the story.

There are also several other subplots,too. There is the growing romantic attachment after, (wouldn't you know it?), the initial antagonism between Carole and Nick; the enmity between Nick and rival boat owner Homer Ashford, who once did Nick out of a fair share of sunken treasure which they had retrieved; Greta, Ashford's girlfriend,who has also been Nick's mistress and still would be if she could; and Navy Lieutenant Richard Todd, aerospace engineer, an ambitious, bigoted - which is important because Troy Jefferson happens to be black - red-neck, whose one aim in life is to recover the missile to achieve promotion. Oh, and there is also a somewhat irrelevant romance going on between sex-starved, middle-aged, Commander Vernon Winter, in charge of the missile rescue operation, and Tiffani Thomas, a teen-age nymphet.

Sex, in fact, appears much more in 'Cradle' than I can ever before recall in an Arthur C.Clarke book.

Troy, as well as being a seaman, is an electronics wizard who invents a pornographic computer game called, not very originally I thought, 'Alien Adventure' - we know it's erotic because it's described in all its graphic detail. Hero, Nick, has once had a highly-charged affair with an older woman, we read all about that, too, and as for Commander Winter, he's continually feeling bursts of lust in his groin for Tiffani Thomas.

Every one of the main characters have something in their past which, as with us all, affects and colours their present, but I did feel that it was slightly unnecessary to go into all their stories in such length.

I loved the aliens, though. They seem to either look like walking pieces of carpet, six foot high carrots with vertical slits in their 'faces', out of which protrude dangling extensions, or ten-legged, black, spider-like creatures with a penchant for taking bites out of people to see what they taste like. None of them talk but they can communicate by thought transference and, biting apart, they are in no way vicious, thank goodness.

'Cradle' is 373-pages long, it could have been cut by about the odd 73 pages and still been a good story, but it's a 'must' for Clarke fans and, at only £6.99, for any other SF fans, too.

D.M.

DARK NIGHT IN TOYLAND

by BOB SHAW (Gollancz SF £11.95)

Bob Shaw can always be relied upon to provide a good read. His last two books The Ragged Astronauts, (which won the British Science Fiction Award and was short listed for a 'Hugo'), and The Wooden Spaceships were full-length novels, with Dark Night In Toyland he reverts to short stories. And very good they are, too.

Not all of them are science fiction. They range from the title story, which is a genuine flesh-creeper, through fantasy and on to real, honest-to-goodness SF. There are serious, humorous and thought-provoking tales and a novella which is magical in all senses of the word.

As with all anthologies there are some stories which stand out. I thought 'Executioner's Moon', in which the crew of an interstellar survey vessel get into difficulties and are rescued by a computer with a sense of humour, very well done.

In 'Love Me Tender', Massick, an escaped convict takes refuge in a wooden shanty in the Florida Everglades, murders its owner, casts lustful eyes on a girl who has also been given shelter there and finally gets his comeuppance in a particularly horrible way.

'Deflation 2001', a short-short story, tells a cautionary tale of what could happen if ever wage claims really get out of hand and 'Courageous New Planet' shows what soccer hooliganism can eventually lead to. In this a 20th century man is catapulted forward five hundred years and his new hosts put on a football match for his benefit. It's not quite the sort of game he is used to, though. The match is Arsenal v Manchester City, but both teams are playing at home. How? Bob Shaw explains it all very logically.

If I had one favourite it had to be 'Cutting Down'. The reporter husband of a gone-to-seed, very fat, housewife hears of a drug that miraculously causes adipose tissue to disappear. He manages to steal some and administers it to his wife, with dire consequences for both of them. Be sure your slim will find you out, perhaps?

Entirely SF, each story has, unusually, an 'afterword' in which Benford explains how it came to be written. A fascinating glimpse into the way that the creative process can sometimes be sparked off by just a chance remark.

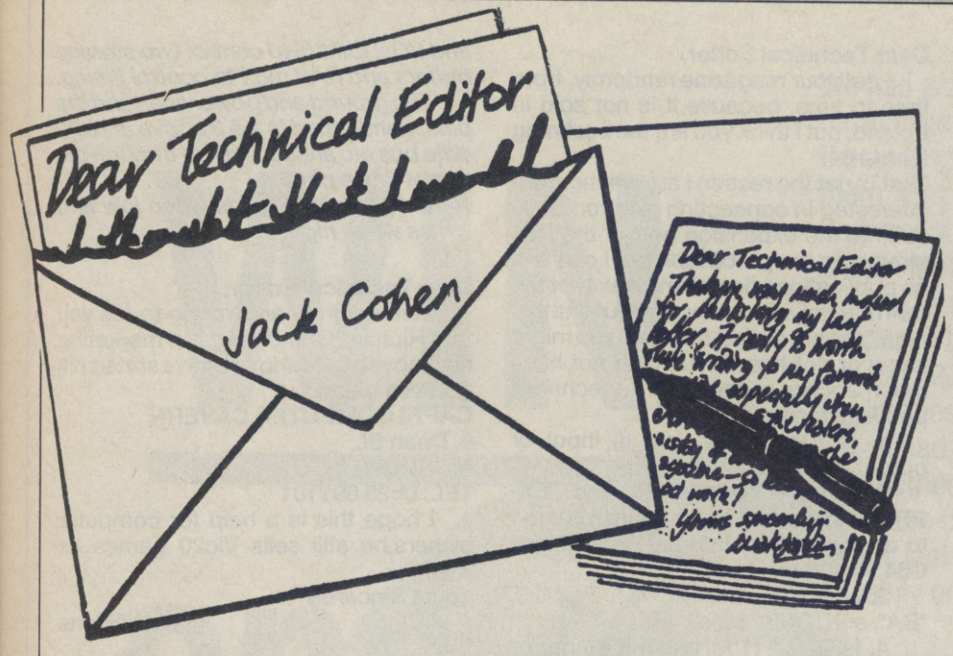
The title story is about a huge, Loch Ness type monster who is, literally, being explored by divers. They have to enter into one of its enormous orifices but what they find inside is not what they expect.

In 'Relativistic Effects' a Marie-Celeste space ship is doomed to ride the skies forever and 'To The Storming Gulf' tells of the aftermath of a nuclear war in which, not unnaturally, there are no winners only degrees of losers. Unconventionally, for a short story, this is told from the differing viewpoints of some of the survivors. It could have been irritating and spasmodic but Benford makes it work.

I could have done with a little more humour and, in one or two cases, with a little less science and a lot more fiction but that's just a nit-pick. There are fourteen stories in this collection which works out at just 25p each one. Could you really ask for better value?

Science Fiction has many different types of writers. To see why the genre has lasted so long and so successfully you need only to read these two books.

D.M.



Dear Technical Editor,

Having recently purchased a C64 Light Fantastic package and subsequently become a subscriber to Commodore Computing International magazine I am but a mere novice in the art of computers and more importantly computer programming. So as you can imagine I find your various articles very enlightening if not sometimes perplexing. One particular point that has been bugging me regarding Jan 1990's issue is the following."Page 90" Team draw program.

(1) What do the four letters down the side of each program line signify?

(2) Are the abbreviations, i.e. (CD) (BLU) (CLR) (YEL) basic language or are they just typed in as read?

(3) I notice that one set of brackets is shaped [] whilst another set is shaped (). Is this significant?

(4) Am I trying to run before I can walk?

Despite numerous attempts to load this program in particular, as soon as I get to line 22 and press return the computer responds with "Syntax Error".

Would it be possible for you to explain the above points and perhaps any others that I should be aware of.

Yours Faithfully

D.Climpson

Dear D J Climpson,

1. The four letters before each line number are explained on page 84 of the JAN 90 issue.

The S.Entry program has to be entered and saved before use.

This program when run is a background program which enables you to enter programs which use these codes, such as 'Team Draw' and 'Super 72'.

After entering such a program type '&' on its own (as mentioned on page 84) This will return a S Entry code which should be the same as the final code in each program.

If the number is different then you have made a mistake in entering the program.

2. The abbreviations you mention are a simple way to read the C64 cursor and other control characters.

[CD] means cursor down, so that when you see it in a program listing then you press the 'Cursor Down' key.

[CU] is cursor up so press shift to get the cursor up symbol.

Incidentally these characters are only controls after the quotes symbol ".

Similarly [BLU] is blue and so on.

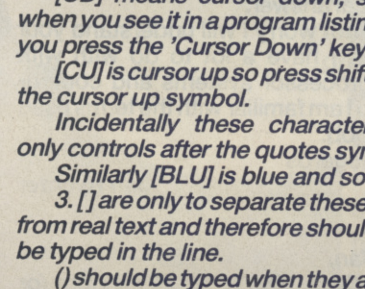
3. [ ] are only to separate these notes from real text and therefore should NOT be typed in the line.

() should be typed when they appear outside text because then they are part of the basic program structure.

When appearing after quotes then optional unless it alters the meaning of the text.

4. In line 22 after each print statement there is a semi-colon (;) and a colon (:). Have you entered these correctly?

Only type in the codes if you have previously run S-Entry



Dear Technical Editor,

Since the November edition of (Commodore) I have saved the program for Conversion by D.Bailie. It is a very good program. Could you please tell me if the January part of the program is right?

The last line in Decembers issue was (6250) and January started at line (7150), reading through the program it looks as if there should be some program between 6250-7150. If you could please check on this for me I would be very grateful, and if there is some missing could you please send it to me. I think that the Commodore Computing magazine is very good and it would be a shame to miss part of this program.

Thank you for your time and help.

yours Faithfully

T Rogers

Dear T Rogers,

Yes you are correct and there is a missing section.

Look in the November 89 issue on page 84 at line 240 in the Conversion program.

This mentions a line number of 6460 after the ON GOTO.

Dear Technical Editor,

I have got a problem with my C128D with which I hope you can help. Several weeks ago I had to move my workstation to another room, to do this I duly inserted the head vibration protector into the disk drive and closed it. Unfortunatley when I had re-established myself I forgot to remove the card before turning on the power and as the 128D checks the drive on power up the inevitable happened, nothing worked.

Suspecting it might be a fuse, and the guarantee had run out I decided to open the case and have a look for myself, I also removed the cover on the drive unit and found what looked like a fuse but this looked okay. Not finding anything I tried to move the drive heads manually (could this be my un-doing?). Having failed to locate the fault I took it to a repair outfit where they restored power and got it going.

All was fine until I tried to load my Artist 64 disk and after several tries it still wouldn't work. I contacted the repairers and all they could suggest was that the disk was faulty but I new this was not the case as I have since borrowed a friends 1541 drive and successfully loaded it onto my old 64. I have also made a copy of the disk and this will load into the 128D. I am now getting other problems as I cannot scratch a file or format a disk in 128 mode using the HEADER command and several other errors EG. 73 CBM DOS V3.0 1571. 23 READ ERROR.

I have looked this up but they mean very little to me and I am now suspecting that I could have damaged the drive by trying to move it manually, is it possible that I have took the heads out of alignment and if so, can I rectify this myself or will it have to be sent away, or is the fault more serious?

I would be grateful if you could shed some light on the matter for me.

P.S. The drive still loads and saves most programs although some disks BLOCKS do not add up correctly even after using the collect command.

Yours Faithfully

Anonymous

Dear Anonymous,

It seems that you chose the wrong repairers.

Have you tried those who advertise in CCI on the MAGENTA pages?

Also try DB ELECTRONICS on 0245-260874

Dear Technical Editor,

I have just purchased a 1541-11 Disk drive to go with my Commodore 64 that I purchased in the latter part of 1987. My set up now consists of the 64 Computer, a dattessete tape and a star LC-10C printer plus the disk drive of course.

I use Mini Office two that I have had on tape for some time now, I have read up quiet a lot about disk drives and have not had many problems in launching myself into the use of disk drives, and I find them a much faster method of saving and retrieving my letters, and labels, and all the other wonderful things that Mini Office-11 can do, in fact I have just wrote off to Database software to see if it is still available in disk form.

There is just one small problem that is bothering me, and that is what does TPI stand for on a disk because I have tried my old computer dictionary, but there doesn't seem to be any mention of it in there maybe you could fill in this problem.

Yours Thankfully

Tony Wilson

Dear Tony,

TPI means TRACKS PER INCH and it is a measure of the maximum number of tracks that is recommended by the manufacturers to be formatted for that diskette.

Dear Technical Editor,

I am trying to obtain a copy of the "Blue Max" game for my Commodore C64. I think it is a U.S.Gold game. I have tried several places in this area but have been without any luck. I wonder if you could help me with this, and prehaps let me know how I can get a copy. Thankiny you in anticipation.

Yours Faithfully

S.Macsween

Dear Stuart,

Try Supersoft on 01-861-1166 who usually have a collection of older games.

Dear Technical Editor,

I get your magazine randomly, from time to time, because it is not sold in Poland, but I think you are the best mag for the 64.

That is not the reason I am writing. I am interested in connecting electronic circuits to the expansion port of the C64 straight to the processor, but I can find no publications describing it except the C64 manual, which is not very useful this time. You are my last hope. As you might know or not know, here I do not have much access to the western technical publications for C64.

1. Is "Dot Clock" (pin 6) input or output and what exactly is it?

2. what does "GAME" and "EXPROM" stand for? I have heard it is used to disconnect the internal RAM for the C64. Is that true?

3. What about the "ROML", "ROMH", "BA", and "DMA" pins?

4. Is "S 02" (1 MHz-pin E) input or output ?

5. Are all the signals buffered or are they connected directly to data bus, address bus and system bus?

6. Does the "R/W inverted" signal apply to standard (0-write, 1-read)?

Please do not tell me to refer to any western publications, because I do not have access to them. I would be very grateful for the concrete and strictly technical answer.

Do not worry I will understand your answer. I have a lot to do with with microprocessor systems and computers, so I am familiar with the terms used in that job.

Best Regards

Jan Rychter

Dear Jan,

1. Dot Clock. 8MHz dot clock input for the programmers video control.

2. 'GAME' replaces BASIC ROM with external cartridge ROM when grounded.

'EXROM' replaces RAM from $8000 to $9FFF with cartridge ROM when grounded.

3. 'ROML' chip enable selects ROM $8000 - $9FFF when XROM is low needs address bits A0 - A12.

'ROMH' selects external ROM at $A000 - $BFFF (or $E000 - $FFFF, for MAX) when 'GAME' or 'EXROM' is low, needs address bits A0 - A12.

'BA' is Bus Acknowledge. To use pull DMA low. An external device can control the 64 while BA is high.

'DMA' - Direct Memory Access - see 'BA'.

4. By S 02 (pin E) I understand you to be referring to pin E on the bottom of the chip. This pin is a rho2 system clock.

It is essential for I/O timing but it is not necessary for external ROM.

5. Interfaces usually use I/O 1 (pin 7) and I/O 2 (pin10) to control two storage buffers and R/W rho2 to control timing.

The ground and power lines and the pins mentionned in 2 & 3 above and the data bus etc are accessible through the use of these pins.

6. R/W (pin 5) reads when low and writes when high.

Dear Technical Editor,

I am writing I am writing to tell you that Richard Grandy of Capri marketing has moved to Marlow, I have stated his address below:

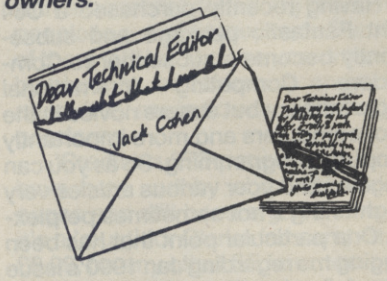
CAPRI COMPUTER CAVERN
9, Dean St.
MARLOW
TEL: 0628 891101

I hope this is a help for computer owners,he still sells Vic20 games as well!

Yours Sincerely

N. Williams

Nick provides info and help for VIC 20 owners.



Dear Readers,
We know you've got news and views. We know you've got ideas and opinions. We know you've got gripes and criticisms.

So why not let everyone know?

Send us your thoughts (printable ones please!) and we'll include them on our letters page.

Write to us at 40 Bowling Green Lane London EC1R ONE — SOON!

Yours,

C.C.I.

WIN one of ·5· COMMODORE PRINTERS!

We had a call this week from a shady backstreet typewriter manufacturer, calling themselves Commodore. According to them, they make the Amiga and Commodore 64. It seems that these little known machines are in fact rather good sellers, to such a degree that the latter is supposed to have out-sold the legendary Dragon 32, and as a result has become the world's best selling computer! A likely story! We all had a good laugh at their expense, until someone pointed out that we had in fact been covering Commodore computers for the last decade! The joke was most certainly on us!

Anyway, to show there were no hard feelings, Commodore offered us five of their MPS 1200 series printers, to give away to you lot as prizes. Can you guess how you can get your hands one of these little nine-pin beauties? Here's a clue: try answering the following questions, and sending them to us on a postcard. The senders of the first five to have their corners chewed by Norris, the office hamster, will be the lucky recipients.

1. In printer speak, what does NLQ stand for?
   a) Nine Line Quantisation
   b) Non Limited Quantity
   c) Near Letter Quality

2. Who wrote the wordprocessing feature in this issue?

3. The arrangement of a standard QWERTY keyboard was designed to make fast typing easier. True or false?

Answers on a postcard to:

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CCI
40 BOWLING GREEN LANE
LONDON
EC1R ONE

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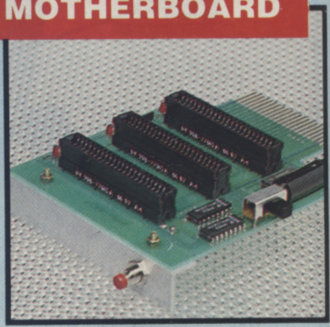

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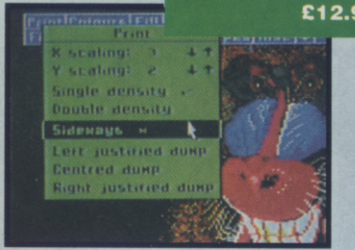
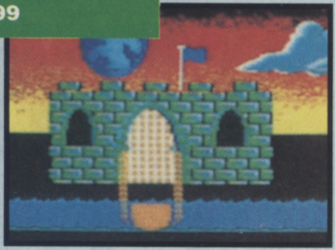

Print Colours Fill
Print
X scaling: 3
Y scaling: 2
Single density
Double density
Sideways
Left justified dump
Centred dump
Right justified dump



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COM 4

BLOW UP A PLANET 50 TIMES!

with RETROGRADEfrom Thalamus

Retrograde is the brilliant new planet-busting shoot 'em up from Thalamus. Reviewed last issue, Retrograde combines traditional horizonally scrolling sections, with vertically scrolling platform stages, and rounds it all off with a fight to the death with a huge level guardian. Thanks to some superb graphics and sounds, not to mention the gallons of gripping gameplay, it's one of the most impressive 64 blasters of all time! It's one game no self-respecting alien zapper claims Tony ('my middle name is Thalamus') Horgan should be without.

Thalamus are so stunned by it all, (or could it be that for once 'Orrible Horgan likes something?)that they've donated FIFTY copies of the game as competition prizes. All you've got to do is come up with the correct answers to the following questions, jot them down on a postcard, and get them off to us without delay. If you're one of the first half century to be plucked from obscurity, you'll be in for some lengthy alien-zapping sessions in the near future.

1. Name one other shoot 'em up from Thalamus.

2. The thalamus is a part of which organ?
a) heart b) brain c) Tony

3. Of what is a lightyear a measurement?
a) distance b) light intensity c) speed

Answers on a postcard to:
Retrograde Competition
CCI
40 Bowling Green Lane
LONDON
EC1R ONE

Conversion

CP/D. Bailie C64, C128, +4.

Another part of this informative program which gives you many types of numeric conversions.

```
IILK 7760 PRINT:PRINT
LEGP 7770 D1$=""
FBGF 7780 PRINT" SELECT ONE OF THE FOLLOWING:";D1$
ENOD 7790 PRINT:PRINT" 1-ANOTHER CONVERSION"
OLDL 7800 PRINT" 2-RETURN TO 'PRESSURE' MENU"
GKGD 7810 PRINT" 3-RETURN TO 'MAIN' MENU"
BHAL 7820 GET D1$:IF D1$="" THEN 7820
IKBA 7830 IF D1$ <"1" OR D1$ >"3" THEN7820
FPIE 7840 IF D1$="1" THEN 7690
IIHB 7850 IF D1$="2" THEN 7330
OPNL 7860 IF D1$="3" THEN 100
OLKI 7870 PRINT"[CLR]"
JDIB 7880 PRINT"[RED][CR6]ATMOSPHERE TO POUNDS SQ INCH[BLK]"
NMAF 7890 PRINT:PRINT
LAHP 7900 INPUT" ENTER NUMBER OF ATMOSPHERE";C
HIFM 7910 PRINT:PRINT
DJNN 7920 CC =C *14.696
BOON 7930 PRINT C "ATMOSPHERE = "CC "POUND SQ INCH"
CNMF 7940 PRINT:PRINT
FBGP 7950 D1$=""
GNNG 7960 PRINT" SELECT ONE OF THE FOLLOWING:";D1$
NKGP 7970 PRINT:PRINT" 1-ANOTHER CONVERSION"
EFPG 7980 PRINT" 2-RETURN TO 'PRESSURE' MENU"
FMIN 7990 PRINT" 3-RETURN TO 'MAIN' MENU"
CGNL 8000 GET D1$:IF D1$="" THEN 8000
DLCF 8010 IF D1$ <"1" OR D1$ >"3" THEN8000
EMLH 8020 IF D1$="1" THEN 7870
IOIM 8030 IF D1$="2" THEN 7330
KHHA 8040 IF D1$="3" THEN 100
NPFD 8050 PRINT"[CLR]"
HNOL 8060 PRINT"[RED][CR3]POUNDS SQ INCH TO KGRMS SQ C/MTR[BLK]"
EPCO 8070 PRINT:PRINT
MFNM 8080 INPUT" ENTER NUMBER OF POUNDS SQ INCH";C
FPFG 8090 PRINT:PRINT
FJNC 8100 CC =C *0.07031
NAIK 8110 PRINT C "POUNDS SQ INCH = "CC "KGRMS SQ C/MTR"
MIHI 8120 PRINT:PRINT
LCHA 8130 D1$=""
MPNH 8140 PRINT" SELECT ONE OF THE FOLLOWING:";D1$
EAPL 8150 PRINT:PRINT" 1-ANOTHER CONVERSION"
DFEN 8160 PRINT" 2-RETURN TO 'PRESSURE' MENU"
CEHF 8170 PRINT" 3-RETURN TO 'MAIN' MENU"
KHDN 8180 GET D1$:IF D1$="" THEN 8180
ACJI 8190 IF D1$ <"1" OR D1$ >"3" THEN8180
FCOH 8200 IF D1$="1" THEN 8050
MGNP 8210 IF D1$="2" THEN 7330
PPJF 8220 IF D1$="3" THEN 100
BBKI 8230 PRINT"[CLR]"
JKAC 8240 PRINT"[RED][CR8]POUNDS SQ INCH TO BAR[BLK]"
DHBF 8250 PRINT:PRINT
EGIF 8260 INPUT" ENTER NUMBER OF POUNDS SQ INCH";C
OKLA 8270 PRINT:PRINT
BFFG 8280 CC =C *0.06895
PCCI 8290 PRINT C "POUNDS SQ INCH = "CC "BAR"
```

continued on page 70

continued from page 69

```
LAED 8300 PRINT:PRINT
LLIJ 8310 D1$=""
CNKE 8320 PRINT" SELECT ONE OF THE FOLLOWING:";D1$
AGNK 8330 PRINT:PRINT" 1-ANOTHER CONVERSION"
LHJN 8340 PRINT" 2-RETURN TO 'PRESSURE' MENU"
AGNA 8350 PRINT" 3-RETURN TO 'MAIN' MENU"
AIIG 8360 GET D1$:IF D1$="" THEN 8360
AONI 8370 IF D1$ <"1" OR D1$ >"3" THEN8360
EENP 8380 IF D1$="1" THEN 8230
NDMC 8390 IF D1$="2" THEN 7330
ABOA 8400 IF D1$="3" THEN 100
OMGM 8410 PRINT"[CLR]"
LAJC 8420 PRINT"[RED][CR6]POUNDS SQ INCH TO ATMOSPHERE[BLK]"
LPFJ 8430 PRINT:PRINT
ABDK 8440 INPUT" ENTER NUMBER OF POUNDS SQ INCH";C
NJLH 8450 PRINT:PRINT
MGIL 8460 CC =C *0.06805
PBMB 8470 PRINT C "POUNDS SQ INCH = "CC "ATMOSPHERE"
PKLI 8480 PRINT:PRINT
ELKI 8490 D1$=""
GKBL 8500 PRINT" SELECT ONE OF THE FOLLOWING:";D1$
PJPO 8510 PRINT:PRINT" 1-ANOTHER CONVERSION"
DAON 8520 PRINT" 2-RETURN TO 'PRESSURE' MENU"
GBDP 8530 PRINT" 3-RETURN TO 'MAIN' MENU"
MBJK 8540 GET D1$:IF D1$="" THEN 8540
MHGI 8550 IF D1$ <"1" OR D1$ >"3" THEN8540
MLCL 8560 IF D1$="1" THEN 8410
FBEM 8570 IF D1$="2" THEN 7330
PNPF 8580 IF D1$="3" THEN 100
JLLC 8590 PRINT"[CLR]"
HLMC 8600 PRINT"[RED][CR13]TEMPERATURE[BLK]"
MHGC 8610 PRINT:PRINT
AJEB 8620 PRINT" WHICH CONVERSION DO YOU WANT?"
BKMH 8630 PRINT:PRINT
IKJJ 8640 PRINT" 1-CENTIGRADE - FAHRENHEIT"
JHNA 8650 PRINT
CDHC 8660 PRINT" 2-FAHRENHEIT - CENTIGRADE"
KBIM 8670 PRINT:PRINT
MBNM 8680 B$=""
OANF 8690 PRINT" SELECT ONE BY PRESSING THE APPROPRIATE[SP2]NUMBER (1-2)";B$
MBHI 8700 GET B$: IF B$="" THEN 8700
GCPA 8710 IF B$ <"1" OR B$>"2" THEN 8700
KGKD 8720 ON VAL (B$) GOTO 8730,8910
KMOF 8730 PRINT"[CLR]"
EBPO 8740 PRINT"[RED][CR8]CENTIGRADE TO FAHRENHEIT[BLK]"
KOOG 8750 PRINT:PRINT
LADP 8760 INPUT" ENTER TEMP IN CENTIGRADE";C
HDED 8770 PRINT:PRINT
JMHF 8780 CC =C*1.8+32
NPNP 8790 PRINT C "CENTIGRADE = "CC "FAHRENHEIT"
FBGK 8800 PRINT:PRINT
MIBJ 8810 D1$=""
GION 8820 PRINT" SELECT ONE OF THE FOLLOWING:";D1$
LIKM 8830 PRINT:PRINT" 1-ANOTHER CONVERSION"
AOLP 8840 PRINT" 2-RETURN TO 'TEMPERATURE' MENU"
ACLH 8850 PRINT" 3-RETURN TO 'MAIN' MENU"
EHOD 8860 GET D1$:IF D1$="" THEN 8860
MPPO 8870 IF D1$ <"1" OR D1$ >"3" THEN8860
OGIC 8880 IF D1$="1" THEN 8730
DMJN 8890 IF D1$="2" THEN 8590
BNOJ 8900 IF D1$="3" THEN 100
JJJG 8910 PRINT"[CLR]"
IFEP 8920 PRINT"[RED][CR8]FAHRENHEIT TO CENTIGRADE[BLK]"
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continued on page 76

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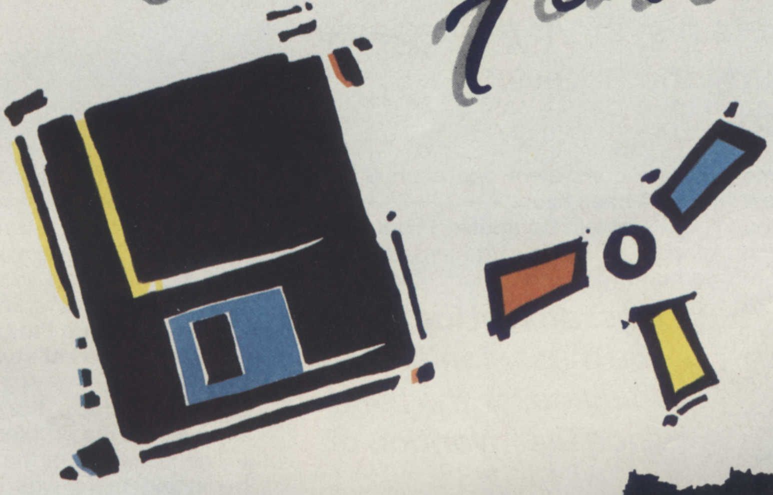

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Voice Activated Technology

Peter Gerrard discovers a system that speaks created by the company that makes Stevie Wonder's piano

If you have been around the home computer scene long enough, cast your mind back to the VIC 20. You may recall a speech synthesiser which appeared for it, using the system of phonemes as explained by Kati Hamza in her article on the future of computer sound in the September 1989 issue of CCI. I can remember getting one of our cats to respond to her name (the cat's, not Kati's, this was in the early 1980s), but apart from her (the cat that is) thinking that a talking computer was a poor substitute for a food dish, the speech synthesiser didn't progress very far.

The Spectrum had an ingenious device that allowed you to talk to it, and a very simple game could be played by shouting frantically into a microphone and causing waves of alarm to ripple round amongst the neighbours. Shouting FIRE! at the top of your voice sometimes has this effect.

The 64 followed the VIC and then came the talking Amiga and its "ability" to translate as well. Optical scanners that could trace a sheet of paper and display the words on screen and/or save them to disk were also available, and it might seem like a good idea for blind people if an enterprising company were able to combine the two and produce a computer system that could scan a page of a book and then speak it back. Well somebody has now done it.

It's a staggering thought that it took us nigh on two thousand years to advance from hieroglyphics to colour photography, yet in the following hundred years we have reached the stage where computers can scan text and read it back to us.

"It was rated at the time as the most significant advance for the blind since the invention of Braille"

Kurzweil Computer Products, for those unfamiliar with them, have been around for some time. They attracted major interest in 1976 when they launched their first Reading Machine, a three hundred and fifty pound (weight!) monster of a thing that would have cost you around fifty thousand dollars to buy. Even with weight and cost stacked against it, it was rated at the time as the most significant advance for the blind since the invention of Braille back in 1829 by Louis Braille, himself blind since the age of three.

What is causing all the excitement now is the latest model from the company, a beast called the Xerox/Kurzweil Personal Reader (KPR for short), which sells for a fraction of the price and has many times the amount of memory of that original Reading Machine. What this system consists of is an optical scanner that can translate written material into computerised speech.

Behind that sweeping statement, though, lies a vast amount of computer expertise in both scanning the text and converting it into synthesised speech. There are immense difficulties in scanning even the most ordinary of typeset material (handwritten material can, for now, be ruled out. A speech recognition system such as we will come to later may be designed to cope with one accent: give it a different one to listen to and it will give up the ghost. The same applies to different styles of handwriting).

So how have Kurzweil set about coping with the problems? Artificial Intelligence is one of the answers. In the beginning there was what is termed Optical Character Recognition, but that falls down on one very important point: it can only read what it has been taught to read. That is, a device using Optical Character Recognition can be shown all the letters of the alphabet, numbers, grammatical characters and so on, in a particular font and pitch size (it might be told about all the characters used in this article, for instance). Having "learned" that, it can then be shown what a typical page layout looks like. Then, and only then, can it scan a page of text that abides by all of these rules.

You can see the limitations immediately. Of all the documents in all the world, very few will conform to the layout that the OCR device has been taught, and so only a small fraction of material can be looked at in this way. And if you were to change fonts in the middle of a document, or go into italics or bold print or underlined print or do anything of that sort, our OCR device is sent whirling down a well known creek without a paddle.

Reasonably enough, Kurzweil de-

continued on page 74

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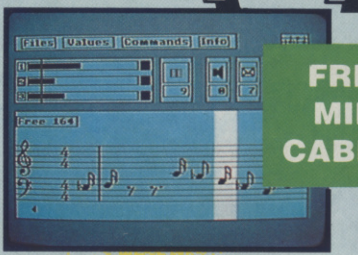

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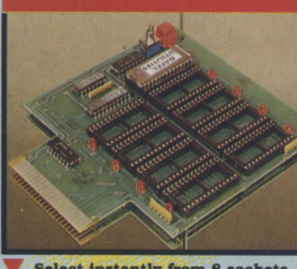

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cided that this very limited approach to scanning text was not going to get them very far, and they adopted a different way of doing things. Instead of OCR they gave us ICR, the I standing for Intelligent. An awful lot of work must have gone into this! Every character in a document is "read" by their Artificial Intelligence software and its shape analysed to determine which character it actually is. Using these very powerful techniques we arrive at the stage where virtually any font and pitch size can be used within the same document, and what is more they can now be changed many times without throwing the scanning device into confusion. Intelligent, and very sensible, Character Recognition indeed.

> ***"Every character in a document is "read" by their Artificial Intelligence software and its shape analysed to determine which character it actually is."***

So that's one side of the Kurzweil story, the production of a high quality scanning device. Before we get to the talking computer that will respond to this scanning, another way in which computers can be used to help the blind is if they can listen as well as talk and read (the computers, that is!). Needless to say Kurzweil can cope with that as well, but the same limitations mentioned earlier still apply. Once the computer has been "trained" to understand your voice, it will most likely ONLY understand your voice and will probably ignore anyone else. An interesting way of replacing the humble key in the front door, I would have thought. You have to speak to your door before it opens, and since the computer attached to the door has only been taught to recognise your voice then it will only open if you talk to it.

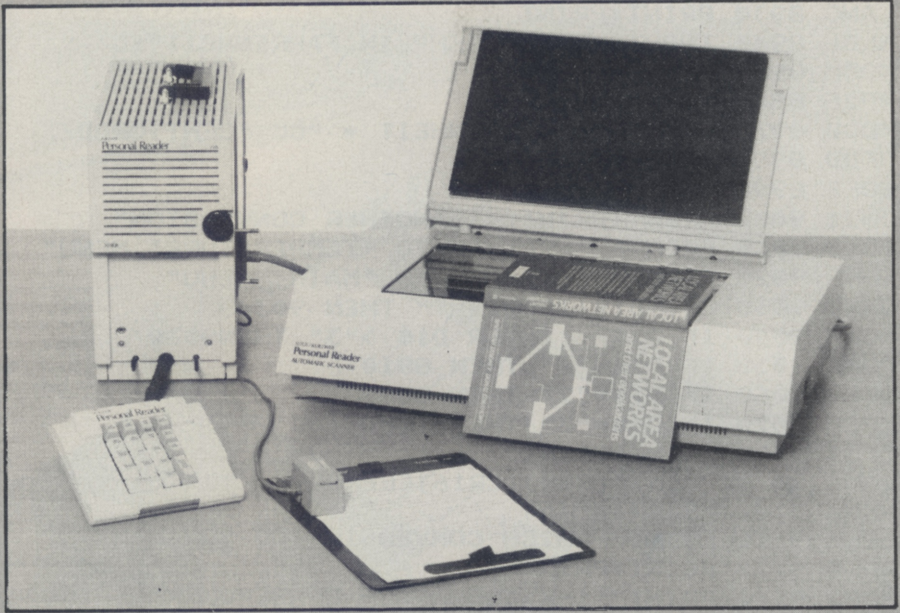
The Kurzweil device stores the voice patterns that the system recognises onto disk. So when another user wishes to make use of the system it is simply a case of calling up those different patterns. This way many people can use the same system without taking the computer through a re-training program. The Kurzweil system gives accurate recognition of up to one thousand words or phrases (How many BASIC keywords are there? Computer, take a letter) by using more artificial intelligence techniques. When you say the word "HELLO" to it, the system should subsequently be able to recognise the word in all its different intonations, which we might write as "hello?", "Hello!", and so on.

Putting the artificial intelligence scanning into a package with a talking computer, though, is the main way in which Kurzweil help the blind. This package is known as the Kurzweil Personal Reader. It consists of three devices. These are a hand-held scanner which really is hand-held, being just 4 by 1 by 1 inches in size with a one inch imaging array, or area for scanning text. The second device is a table-top scanner, which looks remarkably like a photocopier, while the third one is the all-important Electronics Unit, which does all the hard work.

This latter unit consists of a keyboard, a speaker, and many circuit boards for coping with the demands of the whole system. Apart from holding the central processing unit, these boards also handle the RS-232 serial interface, which gives us direct access

KV8
for speech recognition
KURZWEIL AI

to other systems and the interesting prospect of printing out in Braille. Another board looks after the speech synthesiser, while the rest go into dealing with the two scanners, both hand-held and table-top.



To look at the hand scanner first, as you move it across a piece of text everything visible within the one inch area is passed to the main control program for decoding. Adjustments can be made for different scanning speeds as well, which seems remarkably clever. In order to keep everything functioning properly, anything that you are scanning is put onto a magnetic tracking surface, and a corresponding magnetic pattern on the scanner helps you to move in straight lines both across and down the text. As well as the hand-held scanner, though, we have the table-top one, and the reason why it looks like a photocopier becomes obvious when you discover who designed it.

The designers were the Japanese branch of the parent company of Kurzweil, and that parent company just happens to be Xerox, makers of many a photocopier. The imaging array this time is nine inches, which moves from top to bottom of the page and thus covers all of it. To go technical on you for a while: "the image is scanned in six bit gray scale at 400 dots per inch, then processed to enhance fine detail and thresholded to produce a black and white image at the same resolution". In other words, the whole process is very like producing a black and white photocopy.

The speech synthesiser part of the proceedings uses an Intel 80186 chip, and as well as a digital signal processor, it also has analog circuitry which allows the shaping of audio signals in order to produce the voice. Nine different voices can be used in all, at reading speeds of 120 to 350 words per minute, but I would have thought that 350 words would be a bit much for most of us. The volume can be adjusted, and the user can also record the speech for later playback. An automatic pause control stops the tape when the system isn't talking.

> ***"Each letter is "guessed" several times until a grouping of letters corresponds to a word, and if the system is having difficulty with any part of the text it goes on to another piece that it can understand before coming back to try again."***

Speaking can obviously only occur after the text has been scanned and recognised, which is an intriguing process. All the black parts of our black and white image are grouped into letters, then words, and finally columns (for reading newspapers, for example). Each letter is "guessed" several times until a grouping of letters corresponds to a word, and if the system is having difficulty with any part of the text it goes on to another piece that it can understand before coming back to try again. When it's all been sorted out the words are organised into lines and the text is subsequently spoken in the correct order. It takes about 60-90 seconds for a sheet of A4, and around 20 pages of text can be held in memory at any one time.

There is now another option that allows it to run on any fully IBM compatible PC, such as a Commodore PC1. Text is scanned and entered into the PC (so that it could be used in a word processing document, for instance), and then spoken if required.

You may be wondering how much all this costs? The automatic table-top scanner costs $10,000 with the hand-held scanner weighing in at $8,000. For the technology involved this is not a particularly high price, and I'd be willing to bet that it will come down enormously in the years to come. In 13 years it has already fallen from $50,000 to $10,000. Who knows what the next fifty years might hold?

Apart from the obvious applications for blind people (they've got Stevie Wonder appearing in a series of advertisements for them in the States, not surprising when you find out that they constructed both a voice operated typewriter and a v.o. piano. Yes, he just called to say Happy Birthday on a Kurzweil.) You can also regard the Kurzweil system as a talking terminal, or talking calculator, or a data entry system, and there are many other uses besides these. What about dyslexic people? They would also benefit from using a system such as this. In fact, there are many places and work areas that would find the Kurzweil system to their advantage. Schools and libraries are just two obvious ideas that spring to mind.

But it's when you read about the individual stories of people who've used this technology that you realise how immensely useful it really is.

The psychotherapist at Texas A and M University who recently completed his Ph.D. dissertation from the University of Florida, the blind Dr. Robert Carter, who like most of the KPR users regrets that the technology wasn't available earlier. He says that "I can read whatever I like anytime I choose to do so". Simple enough for you and me, but for a blind person to be able to say that is quite something, and it's a glowing tribute to Kurzweil.

There's Olga Espinola, a blind staff manager at New England Telephone, who says that her present job would not be possible without this technology.

The quote of the month, however, has to belong to Mr. Leeds, a New York lawyer who is legally blind. He says "I'm a lawyer - I'm supposed to read the fine print. I can't even read the large print!" He uses the system not only to read text to him, but also to translate it into braille. At a weight of 17 pounds, the system often accompanies Mr. Leeds into court, with earphones and tape recorders attached.

Just three out of many users who have found that the developments of Voice Activated Technology are of immense benefit.

P.G.

Contact: Kurzweil Computer Products Ltd., Unit 8, Suttons Industrial Park, Reading RG6 1AZ.

continued from page 70

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LANC 8930 PRINT:PRINT
NLBL 8940 INPUT" ENTER TEMP IN FAHRENHEIT";C
NGDM 8950 PRINT:PRINT
PPJF 8960 CC =(C-32)*5/9
KDDD 8970 PRINT C "FAHRENHEIT = "CC "CENTIGRADE"
PFDD 8980 PRINT:PRINT
EOEE 8990 D1$=""
JNJI 9000 PRINT:PRINT" 1-ANOTHER CONVERSION"
IGED 9010 PRINT" 2-RETURN TO 'TEMPERATURE' MENU"
IONB 9020 PRINT" 3-RETURN TO 'MAIN' MENU"
GMKL 9030 GET D1$:IF D1$="" THEN 9030
NCIO 9040 IF D1$ <"1" OR D1$ >"3" THEN9030
POKK 9050 IF D1$="1" THEN 8910
OLPL 9060 IF D1$="2" THEN 8590
KPCL 9070 IF D1$="3" THEN 100
CFMI 9080 PRINT"[CLR]"
JAMJ 9090 PRINT"[RED][CR16]ENERGY[BLK]"
NKNK 9100 PRINT:PRINT
LCKM 9110 PRINT" WHICH CONVERSION DO YOU WANT?"
AHHP 9120 PRINT:PRINT
PMDJ 9130 PRINT" 1-KILLOWATT - HORSEPOWER"
BFLH 9140 PRINT
NFEE 9150 PRINT" 2-HORSEPOWER - KILLOWATT"
LMDE 9160 PRINT:PRINT
GKLI 9170 B$=""
AEEP 9180 PRINT" SELECT ONE BY PRESSING THE APPROPRIATE[SP2]NUMBER (1-2)";B$
FCPD 9190 GET B$: IF B$="" THEN 9190
AHHD 9200 IF B$ <"1" OR B$>"2" THEN 9190
KIAI 9210 ON VAL (B$) GOTO 9220,9400
BCJP 9220 PRINT"[CLR]"
NPOE 9230 PRINT"[RED][CR8]KILLOWATT TO HORSEPOWER[BLK]"
BGMA 9240 PRINT:PRINT
AJCH 9250 INPUT" ENTER POWER IN KILLOWATT";C
MLGF 9260 PRINT:PRINT
NFPC 9270 CC =C*1.34102186
INAF 9280 PRINT C "KILLOWATT = "CC "HORSEPOWER"
DFMP 9290 PRINT:PRINT
EDLJ 9300 D1$=""
CPLM 9310 PRINT" SELECT ONE OF THE FOLLOWING:";D1$
GJPD 9320 PRINT:PRINT" 1-ANOTHER CONVERSION"
AMFF 9330 PRINT" 2-RETURN TO 'ENERGY' MENU"
MFAK 9340 PRINT" 3-RETURN TO 'MAIN' MENU"
ECPG 9350 GET D1$:IF D1$="" THEN 9350
JECF 9360 IF D1$ <"1" OR D1$ >"3" THEN9350
HMMG 9370 IF D1$="1" THEN 9220
IHAB 9380 IF D1$="2" THEN 9080
ALNL 9390 IF D1$="3" THEN 100
OPFL 9400 PRINT"[CLR]"
ELGJ 9410 PRINT"[RED][CR8]HORSEPOWER TO KILLOWATT[BLK]"
JOIM 9420 PRINT:PRINT
MKOK 9430 INPUT" ENTER POWER IN HORSEPOWER";C
PIGC 9440 PRINT:PRINT
ICHE 9450 CC =C*0.7457
DFDD 9460 PRINT C "HORSEPOWER = "CC "KILLOWATT"
MLBF 9470 PRINT:PRINT
LDJI 9480 D1$=""
LEDF 9490 PRINT" SELECT ONE OF THE FOLLOWING:";D1$
JGNH 9500 PRINT:PRINT" 1-ANOTHER CONVERSION"
AGKK 9510 PRINT" 2-RETURN TO 'ENERGY' MENU"
KCOF 9520 PRINT" 3-RETURN TO 'MAIN' MENU"
IFJO 9530 GET D1$:IF D1$="" THEN 9530
FJJP 9540 IF D1$ <"1" OR D1$ >"3" THEN9530
AEHE 9550 IF D1$="1" THEN 9400
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continued on page 80

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INFINITE LIVES GENERATOR	Automatic infinite lives!!! Very easy to use, works with many programs. No user knowledge required.
PROF MACHINE CDE MNTR	Full 64K Freezer Monitor - examine ALL memory, including stack, I/O area and registers in their frozen state. Ideal for debugging or just for fun!
SPRITE CONTROL	Freeze the action and view the sprites - watch the animation - customize your games - kill sprite collisions.
FREEZER FACILITY	Now you can make your old slow loading programs load faster. Simply freeze the action and save to tape or disk to reload at superfast speed - no more waiting for programs to load.
DISK COPY	Easy to use disk/file copier. Much faster than conventional methods. Ideal for backing up data disks.
TAPE TURBO	This feature will add Turbo Reload to the programs that you save to tape - no user knowledge required.
FAST FORMAT	Format an entire disk in about 10 seconds - no more messing about.
PRINTER DUMP	Print out your frozen screen to printer - MPS 801, 803, Epson, Star, etc. - very versatile.
CENTRONICS INTERFACE	For parallel printers, Star, Epson, etc. Print out listings with graphic characters etc. (Cable required for parallel port £12.99).
SCREEN EDITOR	Now you can edit the entire frozen screen with this text editor - change names on high scores, etc. Great fun!
EXTENDED TOOLKIT	Many single stroke commands for Load, Save, Dir, etc. Plus range of extra commands, i.e. Auto Number, Old, Delete, Merge, Append, Linesave, etc.

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Emlyn Hughes Scores for Audiogenic!

Audiogenic one of the longest-established computer software houses in the Commodore world has had a smashing success with its Emlyn Hughes International Soccer. One of the best selling games of recent times, it was awarded not one but two CCI 1988 Oskars. The game gained the prize as the best sports simulation of the year and even better was chosen as the overall Best game of 1988.

Emlyn Hughes and Peter Calver, Audiogenic's Managing Director received the award at specially arranged presentation at the Virgin Superstore in London's Oxford street.

The ex-England soccer captain was clearly very popular with the crowds and spent much time signing autographs.

Emlyn Hughes
INTERNATIONAL SOCCER
NOW IN STO
Audiogenic

Quiz Game

Audiogenic taking advantage of the success of International Soccer and Emlyn Hughes' popularity have decided to launch a computerised quiz game. Emlyn Hughes Arcade Quiz is loosely-based on the 'pub' style trivia machines but it also, Audiogenic tell us, combines the strategy of a board game.

There are six categories: Pop and Rock, Sport, Entertainment, Arts and Literature, People and Places and Pot Luck with some 2200 questions.

There are some still mysterious features called Kickers, Blockers, Blasters and Supergraphics. What they do is get to be revealed. If the Arcade Quiz is anything like as popular as International Soccer it could score another big hit for Audiogenic.

Super League Manager

We hear the Audiogenic have not yet finished their Soccer Kick (!). They have signed up West Ham Manager to front their new football game Super League Manager which has the capability to link up with Emlyn Hughes International Soccer.

Super League Soccer is to be released on the 64 and the Amiga early in the year.

Contact: Audiogenic Software Ltd., Winchester House, Canning Road, Harrow. Tel: 01-861 1166.

continued from page 71

```
AFIP 9560 IF D1$="2" THEN 9080
OJFJ 9570 IF D1$="3" THEN 100
S-ENTRY CODE = COFF
```

Basic Effects

D.Dewar. C64, C128.

The following program demonstrates the stunning effects that can be programmed in Basic. Type in 'Basic Demo' to see various effects that are possible, it is well remmed so routines that you wish to use can easily be found.

```
GHKE 1000 PRINT"[CLR][LGRY][CD10][CR5]RAILWAY[CR4]BY[SP3]I.BROWN[SP3]1989":FORT=
     1TO2000:NEXT
BPNG 1010 PRINT"[CLR]":POKE52,48:POKE56,48:CLR
NDGC 1020 POKE56334,PEEK(56334)AND254
KOHA 1030 POKE1,PEEK(1)AND251:FORI=0TO511:POKEI+12288,PEEK(I+53248):NEXTI
FONL 1040 POKE1,PEEK(1)OR4:POKE56334,PEEK(56334)OR1:POKE53272,(PEEK(53272)AND240
     )+12
FAEL 1050 FORA=12288TO12288+319:READAA:POKEA,AA:NEXTA
EKBG 1060 DATA 255,255,255,255,255,255,255,000
DEIG 1070 DATA 007,007,015,031,063,127,251,108
CHNK 1080 DATA 000,255,255,255,255,255,191,028
MLBH 1090 DATA 000,255,255,255,255,255,255,231
DONK 1100 DATA 000,127,255,255,255,255,255,108
EKHO 1110 DATA 000,254,255,255,255,254,255,027
BGPB 1120 DATA 127,255,178,178,255,127,255,054
ICNI 1130 DATA 255,255,195,195,255,255,255,000
JAHP 1140 DATA 254,255,011,011,255,254,255,054
AOID 1150 DATA 015,015,121,127,127,127,255,054
ODNE 1160 DATA 255,255,255,255,255,255,243,192
KANL 1170 DATA 255,255,255,255,255,255,207,003
AEJG 1180 DATA 240,240,158,254,254,254,255,108
HMBI 1190 DATA 127,127,127,127,127,127,255,048
KPKN 1200 DATA 254,254,254,254,254,254,255,012
GPJD 1210 DATA 000,000,065,065,065,127,255,054
OAKC 1220 DATA 000,000,000,000,000,255,153,000
JOFF 1230 DATA 000,000,130,130,130,254,255,108
DHDD 1240 DATA 127,127,094,094,095,095,255,048
EIJI 1250 DATA 254,254,122,122,250,250,255,012
BOAE 1260 DATA 024,127,127,127,127,056,255,109
GAAH 1270 DATA 064,255,255,255,255,063,255,239
DAIH 1280 DATA 248,168,174,254,254,254,255,056
IEOC 1290 DATA 255,255,255,255,255,255,255,255
NKJN 1300 DATA 000,000,000,000,000,001,003,006
AEPA 1310 DATA 000,000,003,031,127,255,083,000
GFAC 1320 DATA 000,192,240,255,255,253,112,000
COHO 1330 DATA 000,024,254,255,255,252,048,000
KCII 1340 DATA 000,016,002,240,001,000,000,000
PJAD 1350 DATA 000,128,231,255,255,255,159,004
EJCA 1360 DATA 000,000,193,247,255,255,024,000
DECL 1370 DATA 000,192,224,254,255,255,240,000
KING 1380 DATA 000,000,000,000,000,000,000,000
INCO 1390 DATA 124,071,111,111,111,111,255,057
HDBO 1400 DATA 000,000,000,000,000,000,000,000
JIIF 1410 DATA 000,000,000,026,255,051,002,000
JIKI 1420 DATA 000,096,000,023,248,004,000,000
FKED 1430 DATA 032,004,016,252,051,000,008,000
DCEP 1440 DATA 000,254,254,254,254,254,255,206
GDPE 1450 DATA 127,234,234,254,254,254,191,240
```

```
PONP 1460 FORT=0TO62:READA:POKE14080+T,A:NEXT
CBAG 1470 FORT=0TO62:READA:POKE14080+64+T,A:NEXT
JEAI 1480 FORT=0TO62:READA:POKE14080+64*2+T,A:NEXT
ENPE 1490 FORT=0TO62:READA:POKE14080+64*3+T,A:NEXT
IPHL 1500 DATA 128,024,002,170,170,170,170,170,170
EGAK 1510 DATA 170,130,170,170,000,170,168,000,042
KLPB 1520 DATA 168,000,042,168,000,042,160,000,010
PAHO 1530 DATA 160,000,010,160,000,010,160,000,010
FPBL 1540 DATA 160,000,010,175,255,250,175,255,250
HPIA 1550 DATA 175,255,250,175,255,250,000,000,000
BBGF 1560 DATA 000,000,000,000,000,000,000,000,000
BODM 1570 DATA 008,000,000,080,000,000,104,000,000
GJBL 1580 DATA 080,000,000,096,000,000,064,000,000
PGPO 1590 DATA 064,000,000,064,000,000,064,000,000
LLDM 1600 DATA 064,000,000,064,000,000,064,000,000
EEHB 1610 DATA 064,000,000,064,000,000,000,000,000
NKDK 1620 DATA 000,000,000,000,000,000,000,000,000
PNPG 1630 DATA 000,000,000,000,000,000,000,000,000
PDHO 1640 DATA 000,000,000,064,000,000,120,000,000
GBMC 1650 DATA 064,000,000,120,000,000,064,000,000
GLJE 1660 DATA 064,000,000,064,000,000,064,000,000
EMFI 1670 DATA 064,000,000,064,000,000,064,000,000
CAPM 1680 DATA 064,064,000,000,064,000,000,000,000
IMAP 1690 DATA 000,000,000,000,000,000,000,000,000
FJIH 1700 DATA 000,000,000,000,000,000,000,000,000
AADG 1710 DATA 000,000,000,000,000,000,000,252,000
GBPD 1720 DATA 001,018,000,127,019,000,255,255,000
FFGG 1730 DATA 127,255,000,020,010,000,008,004,000
MGLH 1740 DATA 000,000,000,000,000,000,000,000,000
OBHL 1750 DATA 000,000,000,000,000,000,000,000,000
IJCP 1760 DATA 000,000,000,000,000,000,000,000,000
KOOD 1770 DATA 000,000,000,000,000,000,000,000,000
FOLJ 1780 POKE53281,6:POKE53280,11
GDND 1790 PRINT"[CLR][BRN][CD14]WW[SP35]WWW";
ODMF 1800 PRINT"WW[SP35]WWW";
FENA 1810 PRINT"WW[SP35]WWW";
FCND 1820 PRINT"WWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWW";
FDME 1830 PRINT"[GRN]WWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWW";
CCMC 1840 PRINT"[LGRY]WWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWW";
CMJA 1850 PRINT"[GRN]WWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWW";
IOIG 1860 PRINT"WWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWW";
LICD 1870 PRINT"[WHT][HOM][CD5][CR4]#$#[SP4][CU]%$%##$[SP11][CD2]%$$[CU][CL]#$#%
     "
EHAM 1880 V=53248:POKEV+21,254
HAOL 1890 POKE2040,220:POKE2041,220:POKE2042,220:POKE2043,220
CAJD 1900 POKE2044,220:POKE2045,220:POKE2046,220:POKE2047,220
NHKL 1910 POKEV+23,126:POKEV+29,126:POKEV+16,32:POKEV+28,254
MCPL 1920 POKEV+12,37:POKEV+13,160
KMNL 1930 POKEV+2,81:POKEV+3,160
IHEB 1940 POKEV+4,129:POKEV+5,160
DMDH 1950 POKEV+6,177:POKEV+7,160
LPOH 1960 POKEV+8,225:POKEV+9,160
ENGD 1970 POKEV+10,17:POKEV+11,160
LAMO 1980 POKEV+39,11:POKEV+40,11:POKEV+41,11:POKEV+42,11:POKEV+43,11
HFAM 1990 POKEV+44,11:POKEV+45,11
DGAM 2000 POKEV+38,5:POKEV+37,11
LLLJ 2010 GOSUB2780
CPLO 2020 T1$="[LBLU]A[LBLU]B[LBLU]C[LBLU]'[LBLU]D[LBLU]E[YEL]F[YEL]G[YEL]G[YEL]
     G[YEL]H[YEL]F[YEL]G[YEL]G[YEL]G[YEL]H[YEL]F[YEL]G[YEL]G[YEL]G[YEL]H[YEL]F[Y
     EL]G[YEL]G[YEL]G[YEL]H[WHT] "
FNLF 2030 T2$="[LGRY]T[LGRY]U[LGRY]V[GRN]F[GRN]G[GRN]G[GRN]H[GRN]F[GRN]G[GRN]G[G
     RN]H[WHT] "
PIOF 2040 T3$="[LBLU]I[LBLU]J[LBLU]@[LBLU]K[LBLU]L[LGRY]F[LGRY]G[LGRY]G[LGRY]G[L
     GRY]H[LGRY]F[LGRY]G[LGRY]G[LGRY]G[LGRY]H[LGRY]F[LGRY]G[LGRY]G[LGRY]G[LGRY]H
     [LGRY]F[LGRY]G[LGRY]G[LGRY]G[LGRY]H[WHT] "
```

```
JOHC 2050 T4$="[GRN]A[GRN]B[GRN]C[GRN]'[GRN]D[GRN]E[LRED]F[LRED]G[LRED]G[LRED]G[
     LRED]H[LRED]F[LRED]G[LRED]G[LRED]G[LRED]H[LRED]F[LRED]G[LRED]G[LRED]G[LRED]
     H[LRED]F[LRED]G[LRED]G[LRED]G[LRED]H[WHT] "
HOHF 2060 T5$="[LBLU]T[LBLU]U[LBLU]V[YEL]F[YEL]G[YEL]G[YEL]H[YEL]F[YEL]G[YEL]G[Y
     EL]H[YEL]F[YEL]G[YEL]G[YEL]H[WHT] "
JDCH 2070 T6$="[GRN]I[GRN]J[GRN]@[GRN]K[GRN]L[LGRY]M[LGFY]J[.GRY]K[LGRY]N[LGRY]M
     [LGRY]J[LGRY]K[LGRY]N[DGRY]O[DGRY]P[DGRY]Q[DGRY]O[DGRY]P[DGRY]Q[DGRY]O[DGRY
     ]P[DGRY]Q[RED]M[RED]N[BRN]R[BRN]S[WHT] "
HBPH 2080 T7$="[LBLU]I[LBLU]J[LBLU]@[LBLU]K[LBLU]L[LGRY]O[LGRY]P[LGRY]Q[LGRY]O[L
     GRY]P[LGRY]Q[LGRY]O[LGRY]P[LGRY]Q[LGRY]O[LGRY]P[LGRY]Q[LGRY]O[LGRY]P[LGRY]Q
     [LGRY]O[LGRY]P[LGRY]Q[GRN]R[GRN]S[WHT] "
JJIF 2090 T8$="[MGRY]T[MGRY]U[MGRY]V[YEL]M[YEL]N[LGRY]O[LGRY]P[LGRY]Q[LGRY]O[LGR
     Y]P[LGRY]Q[LRED]M[LRED]J[LRED]K[LRED]N[BLK]O[BLK]P[BLK]P[BLK]Q[GRN]R[GRN]S[
     WHT] "
HMHH 2100 T9$="[WHT] [YEL]F[YEL]G[YEL]G[YEL]G[YEL]H[YEL]F[YEL]G[YEL]G[YEL]G[YEL]
     H[YEL]F[YEL]G[YEL]G[YEL]G[YEL]H[YEL]G[YEL]G[YEL]G[YEL]H[YEL]F[YEL]G[YEL]G[Y
     EL]G[YEL]H[GRN]I[GRN]J[GRN]@[GRN]K[GRN]L"
CHPH 2110 TA$="[WHT] [LBLU]F[LBLU]G[LBLU]G[LBLU]G[LBLU]H[LBLU]F[LBLU]G[LBLU]G[LB
     LU]G[LBLU]H[LBLU]F[LBLU]G[LBLU]G[LBLU]G[LBLU]H[LBLU]G[LBLU]G[LBLU]G[LBLU]H[
     LBLU]F[LBLU]G[LBLU]G[LBLU]G[LBLU]H[GRN]I[GRN]J[GRN]@[GRN]K[GRN]L"
LLJJ 2120 TB$="[WHT] [LGRY]M[LGRY]J[LGRY]K[LGRY]N[LGRY]M[LGRY]J[LGRY]K[LGRY]N[DG
     RY]O[DGRY]P[DGRY]Q[DGRY]O[DGRY]P[DGRY]Q[DGRY]O[DGRY]P[DGRY]Q[RED]M[RED]N[BR
     N]R[BRN]S[LGRY]I[LGRY]J[LGRY]@[LGRY]K[LGRY]L"
NBDF 2130 S1$="[WHT]X[WHT]Y[WHT]Z[WHT][[WHT]][WHT]↑[WHT]←[WHT]Y[WHT]Z [WHT] "
AFOD 2140 S2$="[WHT] [WHT]Y[WHT][[WHT]][WHT]↑[WHT]←[WHT][[WHT]][WHT]Z[WHT]£[WHT]
     "
HHDN 2150 TC$="[WHT] [WHT]![WHT]&[LGRY]O[LGRY]P[LGRY]Q[YEL]R[YEL]S[WHT] "
KKDA 2160 T8$="[WHT] [YEL]R[YEL]S[BLK]O[BLK]P[BLK]Q[BLK]O[BLK]P[BLK]Q[YEL]R[YEL]
     S[GRN]I[GRN]J[GRN]K[GRN]L"
MLJD 2170 T9$="[WHT] [YEL]I[YEL]J[YEL]J[YEL]L[YEL]I[YEL]J[YEL]K[YEL]L"
AEPN 2180 REM MAIN LOOP
KOPF 2190 FORT=1TO5000:NEXTT
NHPM 2200 A$=TA$:F=5:GOSUB2600
ACFN 2210 FORT=1TO3000:NEXTT
IEHE 2220 A$=T4$:D=1:F=4:GOSUB2450
PFJP 2230 FORT=1TO4000:NEXTT
ECPK 2240 A$=T3$:D=0:F=30:GOSUB2450:GOSUB2680
FGMJ 2250 FORT=1TO4000:NEXTT
EPHP 2260 A$=TB$:F=5:GOSUB2600
IHIK 2270 FORT=1TO500:NEXTT
KEBF 2280 A$=T5$:D=1:F=8:GOSUB2450
DLNG 2290 FORT=1TO6000:NEXTT
MGJP 2300 A$=T9$:F=10:GOSUB2600:GOSUB2680
LDEP 2310 FORT=1TO500:NEXTT
CMOD 2320 A$=TC$:D=0:F=30:GOSUB2450
IGIB 2330 FORT=1TO5000:NEXTT
PGIJ 2340 A$=T1$:D=1:GOSUB2450
MPDH 2350 A$=TA$:F=10:GOSUB2600:GOSUB2680
OJFD 2360 A$=TC$:F=40:GOSUB2600
LLBK 2370 FORT=1TO5000:NEXTT
MPIC 2380 A$=T8$:D=0:F=15:GOSUB2600
GDHK 2390 FORT=1TO5000:NEXTT
PNPB 2400 A$=T9$:D=0:F=5:GOSUB2600
CIBL 2410 FORT=1TO5000:NEXTT
ODHL 2420 A$=T7$:D=0:GOSUB2450:GOSUB2680:FORT=1TO3000:NEXTT:GOSUB2680
MJPK 2430 A$=T2$:F=20:D=1:GOSUB2450:GOSUB2680
AFBM 2440 GOTO2180
OJLC 2450 POKE2047,221:FORX=(LEN(A$)/2)+39TO1STEP-1
DBNM 2460 PRINT"[HOM][CD11]":IFD=0THENPRINT
GDLC 2470 IFS=0THENSM$=S1$
CNJB 2480 IFS=1THENSM$=S2$
OKPD 2490 IFD=1ANDX>40THENPRINTTAB(X-LEN(A$)/2)MID$(SM$,1,(LEN(A$)/2+40-X)*2-2)
LCDN 2500 IFX>40THENPRINTTAB(X-LEN(A$)/2)MID$(A$,1,(LEN(A$)/2+40-X)*2)
IINL 2510 IFD=1ANDX<41ANDX>(LEN(A$)/2-1)THENPRINTTAB(X-(LEN(A$)/2))SM$
```

continued on page 84

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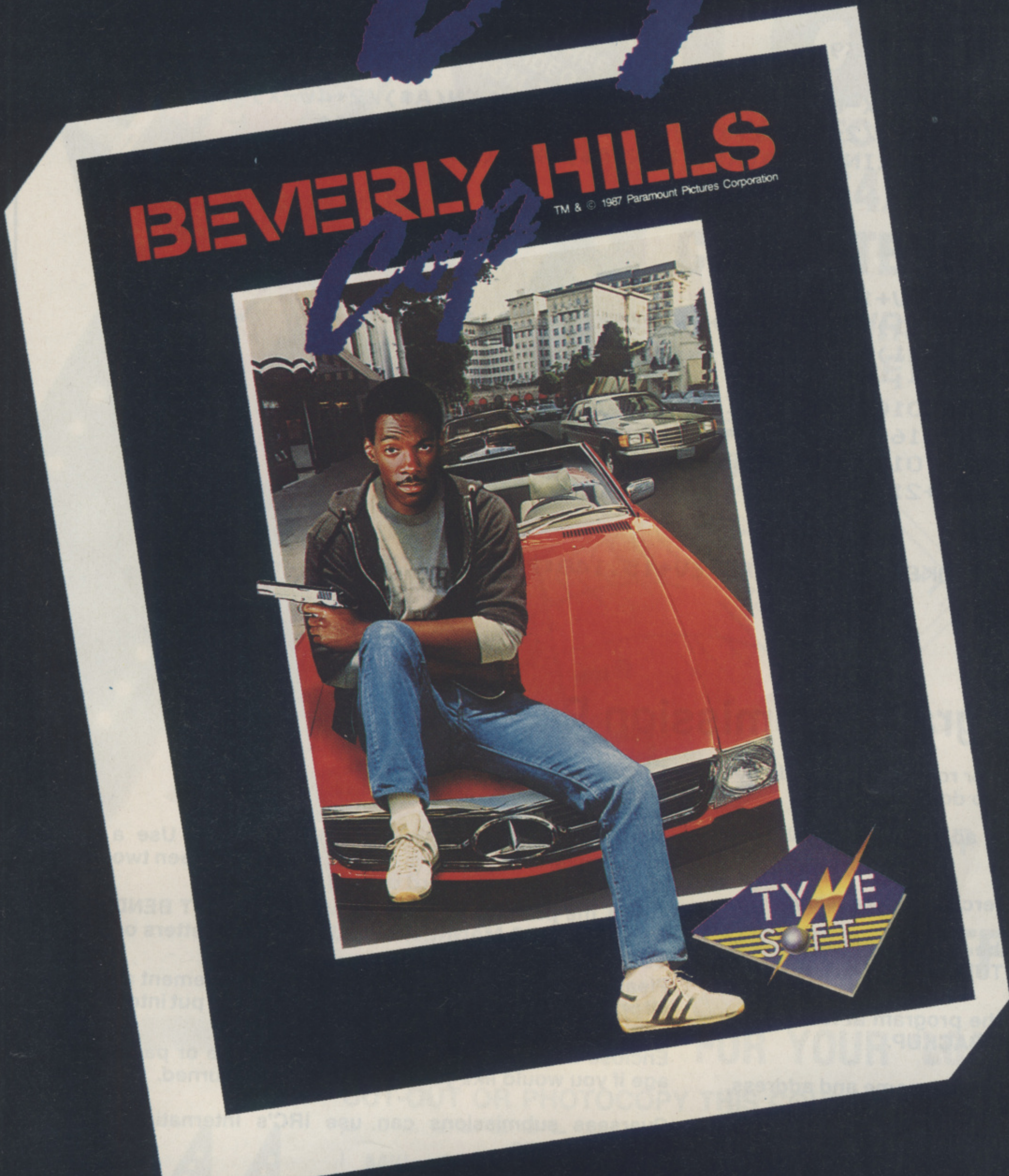
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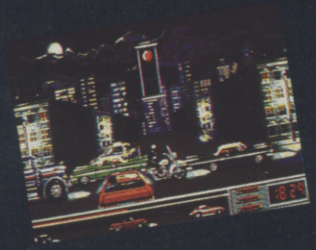

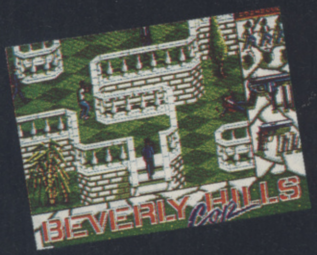
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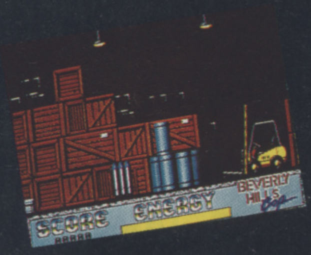
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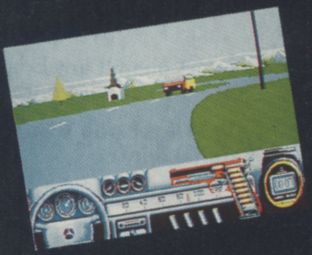

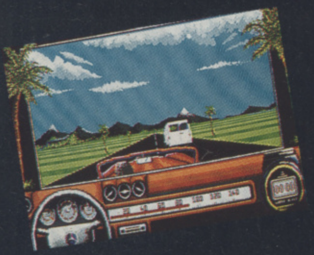

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TYNE SOFT

Tynesoft Computer Software Ltd., Addison Industrial Estate, Blaydon, Tyne & Wear NE21 4TE. U.K. Tel: (091) 414 4611

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```
IJFC 2520 IFX<41ANDX>(LEN(A$)/2-1)THENPRINTTAB(X-(LEN(A$)/2))A$
KGMC 2530 IFD=1ANDX<LEN(A$)/2THENPRINTMID$(SM$,(LEN(A$)-X)-(X-1),(X*2))
HKOO 2540 IFX<LEN(A$)/2THENPRINTMID$(A$,(LEN(A$)-X)-(X-1),(X*2))
BOBB 2550 FORT=1TOF:NEXTT
NIJL 2560 S=S+1:IFS=2THENS=0
DJIF 2570 NEXTX
ODBK 2580 POKE2047,222
BPLP 2590 RETURN
GKCL 2600 FORX=1TO(LEN(A$)/2)+39
LILK 2610 PRINT"[HOM][CD12]"
OPLL 2620 IFX>40THENPRINTTAB(X-LEN(A$)/2)MID$(A$,1,(LEN(A$)/2+40-X)*2)
NHGB 2630 IFX<41ANDX>(LEN(A$)/2-1)THENPRINTTAB(X-(LEN(A$)/2))A$
IHIG 2640 IFX<LEN(A$)/2THENPRINTMID$(A$,(LEN(A$)-X)-(X-1),(X*2))
FJCM 2650 FORT=1TOF:NEXTT
OFFD 2660 NEXTX
CHLP 2670 RETURN
APOP 2680 REM CAR SPRITE
DLCP 2690 POKE2040,223:POKEV+1,200
JFMM 2700 POKEV+39,INT(RND(1)*9):POKEV+16,PEEK(V+16)+1
MMHA 2710 POKEV+21,PEEK(V+21)+1
OMOL 2720 FORX2=100TO0STEP-1
MACF 2730 POKEV,X2:FORT=1TO10:NEXTT:NEXTX2
PPHB 2740 POKEV+16,PEEK(V+16)-1:FORX1=255TO0STEP-1
EPKB 2750 POKEV,X1:FORT=1TO10:NEXTT:NEXTX1
HLOI 2760 POKEV+21,PEEK(V+21)-1
MOKK 2770 RETURN
FAEA 2780 REM[SP5]SIGNAL
MHEC 2790 POKE2047,222:POKEV+14,100:POKEV+15,148:POKEV+46,7
JIPC 2800 RETURN
S-ENTRY CODE = BFPG
```

★ Program Submission Procedure ★

DO NOT submit any program or routine that you do not either own or have authority to do so.

ALWAYS include your name, address and date on all material sent.

NEVER use staples, use paperclips if necessary.

If you are using TAPE save the program at least TWICE on each side. DO NOT USE TURBO SAVE SYSTEMS.

If you are using DISK save the program at least twice and call the second program BACKUP.

IDENTIFY your tape/disk with: your name and address, the program name and WHAT COMPUTER it is for.

PLEASE do not submit hand-written work, unless it is unavoidable. *** Note *** you can always write your instructions in the form of a computer program, eg 1 PRINT 'your text' etc.

INCLUDE a short statement of what your program is supposed to do.

IF YOU USE A WORDPROCESSOR supply a standard ASCII file of the article, this allows us to load it into our standard wordprocessors.

INCLUDE the following STANDARD header on all programs. Even if your program is in multiple parts, include this information on each part
(this will be stripped off prior to publication).

NAME ....
ADDRESS
ADDRESS
ADDRESS
POSTCODE
COUNTRY
TELEPHONE No. (if poss).
COMPUTER
DOS/ROM TYPE
PROGRAM NAME

ALWAYS ensure that disks are well packed, Use a commercial disk mailer or at least packed between two pieces of thick cardboard or rigid plastic.

MARK the package MAGNETIC MEDIA DO NOT BEND OR EXPOSE TO MAGNETIC FIELDS in BOLD letters on BOTH sides.

Please allow at least 8 weeks for acknowledgement as all programs have to be thoroughly tested and put into a suitable format.

Enclose a self-addressed stamped envelope or package if you would like your program to be returned.

Overseas submissions can use IRC's International Reply Coupons.

* Programming Tips *

If you can, use CHR$(x) type commands instead of graphic characters.

Renumber your program in a standard form, most readers use auto number utilities to ease typing in.

Try to keep instructions within the program fairly short. You can expand on them within the text if necessary

TEST YOUR PROGRAMS..better still get a friend to test them for you.

IF YOUR PROGRAM CONTAINS MACHINE CODE: Please use DECIMAL data statements, NOT HEX for the BASIC loader. Keep the same number of data statements on each line (MAX 14) and use the three digit format if possible. eg 000,010,243,001 etc.

continued on page 86

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continued from page 84

S–ENTRY

C64/128

BASIC COMMANDS

S–ENTRY intercepts several vectors in the operating system, and because of this the normal basic commands are not available ... don't worry ... you can still use them by prefixing the command with the @ symbol, so SAVE would become @SAVE, etc.

NOTE: do not use any DOS wedge, or you will confuse S–ENTRY.

S–ENTRY DISABLE

Before you run any programs that you have entered, S–ENTRY MUST BE DISABLED. Enter an ! on its own and S–ENTRY will be removed from memory and the normal operating system restored. REMEMBER ALWAYS SAVE A PROGRAM BEFORE YOU RUN IT!

MISSING LINES

In order to provide you with a flexible system, S–ENTRY only checks on a line by line basis. So if you miss out line 540 say, S–ENTRY will NOT report an error.

This may sound odd, but it does allow you to enter part of the program, then save it and come back to it at a later date. This is also helpful if you and several friends are splitting up the job of entering a large program, each person will be able to say that what has been entered is correct.

To make sure that you have the entire program entered correctly, Enter type '&' symbol on its own. S–ENTRY wil then calculate the S–ENTRY code for the program in memory, you can compare this with the final S–ENTRY code printed at the end of the listing.

ADVANCED USE

If you think you are good enough not to use the S–ENTRY system, you can simply enter the normal basic lines after the S–ENTRY code. But what if you get it wrong? Well S–ENTRY has a command that will produce a summary of the S–ENTRY code and the line number ion memory; you can then compare this with the published S–ENTRY codes and thus track down the problem. This command is «–LIST; you can pause the list by using the Shift/Shift Lock keys. The command will also accept a line numbner range, i.e. 100-200 or 200- etc.

The ONLY difference that S–ENTRY makes to the published listing is the addition of the four character code before the line number, and the addition of the final S–ENTRY code at end of the listing.

S–ENTRY COMMAND SUMMARY

&	Calculates the S–ENTRY code for the entire program in memory.
@	Prefix to a basic command ie @DSAVE or @LOAD
!	Remove S–ENTRY
«–LIST	Display S–ENTRY code summary, use shift/shift lock to pause.

YOU MUST

1. Use EXACTLY the same line numbers.
2. Enter the program exactly as printed, including all REMs.
3. Use EXACTLY the same commands, FULL command names MUST be used, ie '?' cannot be used instead of PRINT.
4. Remember to convert the easy enter codes ie [SP9] means type 9 spaces.
5. Type anything between "   " (quotes) EXACTLY as published.

```
100 REM
110 REM*********************************
120 REM*                               *
130 REM*          CCI S-ENTRY          *
140 REM*                               *
150 REM*       FOR THE C64 & C128      *
160 REM*                               *
170 REM*(C)1989,A.ESKELSON & G.CATTLEY*
180 REM*                               *
190 REM*********************************
200 REM
210 M1=256*PEEK(179)+PEEK(178):C8=65281:C9=C8-2:FA=250:FB=251:FC=252
220 POKE C8,00:REM IF 128 SET BANK 0
230 MC=M1+9:CC=0:FOR I=0 TO 61:READ ZZ
240 CC=CC+ZZ:POKE M1+I,ZZ:NEXT I
250 REM DATA FOR CRC
260 DATA 169,000,133,250,133,251,133,252,096,169,000,133,252,162,008,165
270 DATA 250,042,038,253,042,042,042,042,042,069,253,133,253,165,250,069
280 DATA 253,133,253,165,251,042,042,042,069,253,133,253,038,252,042,069
290 DATA 253,106,038,251,038,250,202,208,214,166,251,165,250,096
300 IF CC<>9069 THEN PRINT"ERROR IN CHECKSUM DATA":STOP
310 REM
320 REM TEST FOR C128/C64
330 IF M1=2816 THEN C64=2:SA=3072:GOTO 360
340 IF M1=828 THEN C64=1:SA=49152:GOTO 360
350 PRINT"ERROR NOT C64 OR C128 ?":STOP
360 READ TC:EQ=0:EA=SA:SYS M1
370 HB=INT(SA/256):LB=0
380 REM START OF LOOP
390 READ DA$:REM READ THE DATA
400 IF DA$="-9999" THEN 480:REM FINISHED ALL THE DATA
410 DA=VAL(DA$):PRINTSA;CHR$(145)
420 IF LEN(DA$)<>3 THEN 450
430 POKE SA,DA:SA=SA+1
440 POKE MC+1,DA:SYS MC:GOTO 390
450 A%=PEEK(FA):X%=PEEK(FB):CK=A%*256+X%
460 IF CK<>VAL(DA$) THEN EQ=1:GOTO 480
470 GOTO 390
480 IF EQ OR (CK<>TC) THEN 510
490 POKE FA,LB:POKE FB,HB:POKE FC,C64:SYS EA
500 PRINTCHR$(147);"S-ENTRY ACTIVE. TYPE '@NEW' TO CLEAR LOADER":END
510 PRINT"LINE/DATA ERROR IN LINE";
520 PRINT PEEK(66)*256+PEEK(65):END
530 DATA 44232
540 DATA 024,165,250,105,028,133,176,165,251,105,002,133,177,169,000,170,48900
550 DATA 168,024,177,176,133,254,200,177,176,101,251,133,255,200,177,176,00903
560 DATA 201,255,240,008,024,101,251,129,254,200,208,229,024,165,250,105,18744
570 DATA 112,133,176,165,251,105,002,133,177,024,165,250,105,126,133,254,17887
580 DATA 165,251,105,000,133,255,162,000,164,252,177,176,072,161,176,240,44466
590 DATA 017,168,104,145,254,165,176,024,105,003,133,176,144,002,230,177,32098
600 DATA 208,230,104,169,000,141,005,003,169,126,141,004,003,169,000,133,49661
610 DATA 252,173,038,003,141,152,002,173,039,003,141,153,002,096,160,000,49456
620 DATA 132,251,132,250,132,180,132,254,132,253,185,000,002,201,032,208,52892
630 DATA 003,200,208,246,201,095,208,017,072,169,171,141,038,003,169,002,22812
640 DATA 141,039,003,032,154,002,104,208,053,072,173,152,002,141,038,003,55274
650 DATA 173,153,002,141,039,003,104,201,064,240,035,201,033,240,013,201,41233
660 DATA 038,208,033,076,068,001,173,141,002,208,251,096,169,067,141,005,20351
670 DATA 003,169,013,141,004,003,169,000,153,000,002,076,013,067,032,128,63881
680 DATA 003,024,144,247,165,252,240,007,169,000,133,252,024,144,236,132,15406
690 DATA 252,152,024,105,004,168,185,000,002,240,007,032,211,001,200,208,05629
700 DATA 245,000,164,252,162,001,185,000,002,072,169,032,153,000,002,104,21893
710 DATA 056,233,065,024,010,010,010,010,133,252,200,185,000,002,072,169,54075
720 DATA 032,153,000,002,104,056,233,065,041,015,005,252,213,250,208,011,11281
730 DATA 200,202,016,210,169,255,133,252,076,209,077,169,000,133,252,162,54224
740 DATA 022,108,000,003,162,001,181,045,149,176,202,016,249,141,001,255,56924
750 DATA 160,000,132,251,132,250,132,180,132,254,132,253,160,001,177,176,45691
760 DATA 240,040,200,177,176,032,211,001,200,177,176,032,211,001,200,177,58968
770 DATA 176,240,007,032,211,001,200,016,246,000,160,000,132,254,177,176,22791
780 DATA 170,200,177,176,134,176,133,177,208,210,160,000,140,000,255,185,63767
790 DATA 154,001,240,022,032,210,255,200,208,245,083,045,069,078,084,082,26008
800 DATA 089,032,067,079,068,069,032,061,032,000,162,001,181,250,072,041,42873
810 DATA 240,074,074,074,074,024,105,065,032,210,255,104,041,015,024,105,62214
820 DATA 065,032,210,255,202,016,229,141,003,255,169,000,141,000,002,076,51028
830 DATA 222,000,096,201,034,208,008,072,165,254,073,255,133,254,104,201,08627
840 DATA 032,208,004,036,254,016,052,133,180,169,001,072,165,251,041,128,08832
850 DATA 042,038,253,165,251,041,008,106,106,106,069,253,133,253,165,251,26391
860 DATA 069,253,133,253,165,250,042,042,042,069,253,133,253,038,180,042,59214
870 DATA 069,253,106,038,250,038,251,104,010,144,208,096,100,000,000,197,16654
880 DATA 000,001,253,000,001,103,001,001,109,001,001,117,001,001,145,001,10659
890 DATA 001,209,001,000,118,000,002,124,000,002,159,000,002,165,000,002,52822
900 DATA 172,000,002,178,000,002,211,002,002,001,003,002,010,003,002,019,14849
910 DATA 003,002,035,003,002,050,003,002,028,003,002,231,002,002,222,002,52909
920 DATA 001,047,003,002,194,002,002,200,002,002,042,003,000,255,255,255,04528
930 DATA 079,165,067,084,124,013,094,124,013,095,165,067,201,043,045,097,06351
940 DATA 115,128,098,000,003,187,138,209,188,164,077,073,141,211,074,002,22835
950 DATA 000,000,064,064,064,064,064,032,000,000,160,000,132,251,132,250,37171
960 DATA 132,180,132,254,132,253,132,177,132,176,096,134,182,132,181,201,46369
970 DATA 013,240,054,166,177,208,037,201,058,176,038,201,046,208,016,072,22106
980 DATA 173,152,002,141,038,003,173,153,002,141,039,003,104,208,018,164,50064
990 DATA 176,153,146,002,230,176,201,032,208,002,230,177,032,211,001,169,15787
1000 DATA 001,166,182,164,181,108,152,002,096,164,177,240,244,169,002,072,30286
1010 DATA 168,136,185,250,000,072,041,240,074,074,074,074,024,105,065,032,48296
1020 DATA 225,002,104,041,015,024,105,065,032,225,002,104,074,144,224,169,27482
1030 DATA 061,032,225,002,169,000,133,176,164,176,185,146,002,201,032,240,17276
1040 DATA 007,032,225,002,230,176,016,240,032,198,000,169,013,032,154,002,25087
1050 DATA 076,225,002,255,44232,-9999
```

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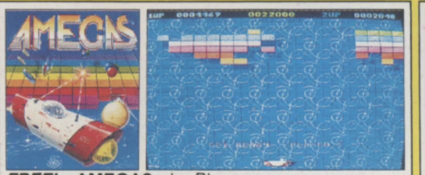
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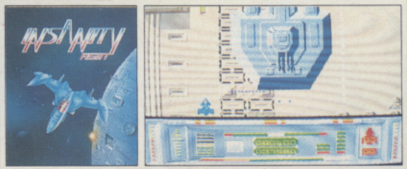
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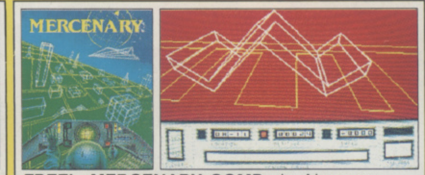
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